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Hans Hass and Jacques-Yves Cousteau. Pioneering Achievements and Structural Inequalities in the Construction of Maritime Memory

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Abstract This study examines the parallel yet highly divergent careers of Hans Hass and Jacques-Yves Cousteau, two central pioneers of twentieth century underwater exploration. While both contributed substantially to marine science, diving technology, and the visual mediation of the underwater world, their long-term global recognition developed in markedly different ways. Drawing on diverse interdisciplinary perspectives, the article explores how geopolitical conditions, institutional support systems, narrative self-presentation, and the rise of a global media ecology shaped their public visibility.

Beyond a biographical or technical comparison, the juxtaposition of Hass and Cousteau is deliberately employed as a conceptual case study to examine the formation of maritime memory in the twentieth century underwater research.

The findings demonstrate that Cousteau's worldwide prominence resulted not solely from scientific or technological achievement, but from his exceptional integration into powerful institutional, technological, and cultural infrastructures that amplified and internationalized his work. In contrast, Hass—despite significant early innovation and ecological awareness—was constrained by weaker institutional embeddedness, a scientifically restrained and emotionally neutral serial television aesthetic with limited long-term repeatability, and subsequent theoretical isolation.

A decisive factor in this divergence was Cousteau's entrepreneurial engagement with emerging television markets, which transformed underwater exploration into a scalable media enterprise and provided the structural basis for his enduring visibility.

Overall, the analysis suggests that maritime memory is shaped less by scientific merit alone than by the ways media, politics, and economic scalability stabilize certain cultural narratives. These dynamics have produced asymmetrical legacies that continue to shape how ocean exploration is remembered and imagined today.

Keywords / Tags Hans Hass; Jacques-Yves Cousteau; Underwater exploration; Marine science history; History of Oceanography; Oceanic History; Maritime Studies; Maritime memory; Cultural memory; Media ecology; Science communication; Scientific recognition dynamics; Science institutions; Geopolitics of science; Marine environmental history; Marine environmental communication; History of scuba diving; History of diving technology; Diffusion of innovations.

Note This paper is published as a working paper and is intended to stimulate scholarly discussion. It represents an extended version of an ongoing research project. Revised and condensed versions may be submitted to journals or edited volumes in the future.

Introduction

The underwater research of the twentieth century is inextricably linked to two names: Hans Hass (1919-2013), the Austrian zoologist, technology innovator and natural philosopher, and Jacques-Yves Cousteau (1910-1997), the former French naval officer, nature filmmaker and environmental activist. Both appeared almost simultaneously as marine explorers and mediators through media of a hitherto largely unknown world of life. In an era in which diving technology fundamentally changed, the mass media began to shape global visual narratives, and an ecological consciousness emerged, Hass and Cousteau acted as intermediaries between technology and popular culture.

With regard to their cinematic works, there are now a number of investigations and comparative studies (Starosielski, 2013; Schwarz, 2018; Cohen, 2022). One research gap, however, concerns the comparative analysis of their contemporary and present-day reception, its long-term effects and, above all, its underlying causes. Neither Madsen (1986) nor Munson (1989) addresses this particular tension. While both provide valuable perspectives on Cousteau's complex personality and the techniques behind his acclaimed films, Munson focuses primarily on Cousteau's role as a showman and his engagement with environmental issues, whereas Madsen offers a more balanced view of the man behind the Cousteau myth.

Torma describes Hass and Cousteau as "agents of oceanography" and as cross-border commuters who embodied different approaches to the tropical oceans through their biographies and expeditions (Torma, 2012, 606). Despite technical parallels, their international reception developed in markedly different ways: Cousteau became a global icon of marine research and a morally charged media figure with enormous reach, a status he continues to enjoy today. As the national hero of France, Cousteau shaped a standard that challenged and continues to inspire subsequent generations of researchers. Hass, on the other hand, although technically and scientifically in his early works and his ecological consciousness until about 1960 Cousteau partly preceded, remained marginalized in the global perception, regionally limited and economically far less successful. This marginalization can be traced back to 1948. In his account of the emergence of modern diving, Dugan framed the narrative in a way that foregrounded Cousteau's developments while omitting Hans Hass's technological contributions. Hass

was described through imagery associated with "ponderous diving bells lowered into the very waters," a characterization that positioned his work as comparatively outdated (1948, 18). An examination of the broader historical development suggests that this narrative framing does not fully correspond to the contemporaneous state of technological innovation. This marginalization does not imply that Hass's theoretical work was uniformly rejected or devoid of internal limitations, but that its reception was shaped by disciplinary, institutional, and temporal constraints.

This study aims to investigate the causes of this divergence. It combines scientific-historical, technological-historical, media-historical, cultural-political and socio-economic perspectives and analyses how geopolitical framework conditions, international spaces of perception, individual communication strategies and institutional structures influenced the careers of both men. The aim is an updated and differentiated re-evaluation of Hans Hass's overall work in relation to marine research as well as a possible explanation for why Cousteau rose to become a global symbol of ocean and environmental consciousness in the twentieth century, while Hass developed a significantly smaller cultural and scientific reach despite comparable pioneering achievements.

The hypothesis on which this investigation is based rests on a multidimensional analysis that assumes that the divergent recognition of Jacques-Yves Cousteau and Hans Hass is not primarily due to their scientific achievements, but rather to an interplay of external factors such as geopolitical framework conditions, institutional support, media staging, economic scalability and cultural narrative formation.

Before the above-mentioned aspects of investigation, a thematic introduction first provides an overview of the personal relationship between the two protagonists. Before turning to the disciplinary perspectives, the study situates both figures within competing cultures of knowledge by examining their position between mediatized expeditionary practice and institutionalized academic fieldwork.

While the study is structured as a comparative analysis of Hans Hass and Jacques-Yves Cousteau, its aim extends beyond explaining their divergent posthumous visibility. The juxtaposition of both figures serves as a conceptual case study through which the historical formation of maritime memory in twentieth century underwater research can

be traced. By contrasting two pioneers whose scientific practices, institutional embeddings, and media strategies differed fundamentally, the analysis investigates how long-term recognition in marine science is produced, stabilized, and hierarchized. The comparison therefore moves beyond a biographical or technical contrast and instead frames maritime memory as a historically contingent process, shaped above all by media circulation and institutional authority.

Conceptually, the study draws on foundational contributions from memory studies, particularly Halbwachs's (1992) notion of socially framed collective memory, Connerton's (1989) emphasis on embodied and performative practices of remembrance, and Erll's (2011) work on media, circulation, and cultural memory. Building on these approaches, the article uses the concept of maritime memory to examine how underwater research has been remembered, legitimized, and canonized over time.

The Relationship of the Two Pioneers

Early Perception without Cooperation (1940s-1960s)

The mutual knowledge of Hans Hass and Jacques-Yves Cousteau began surprisingly early, long before they met each other personally. The first mutual perception already took place in the early 1940s. A large illustrated travelogue about Hans Hass's expedition 1939/40 to the Caribbean was repeated as a summary in the illustrated *Signal*, which was distributed in France in large edition in January 1941 (Hass, 1941). This report, and also the two books *Unter Korallen und Haien* (1940) and *Photojagd auf dem Meeresgrund* (1942) by Hans Hass were read by Cousteau (Jung, 2003) In March 1944, Hass saw a 60-second clip of Jacques-Yves Cousteau, Frederic Dumas and his crew diving with the new Aqua-Lung on a wreck in the news programme *Die Deutsche Wochenschau* (Universum, 1944; Jung, 1997, 37). It was a clip from Cousteau's film *Epaves*. As early as the autumn of 1943, German daily newspapers had reported on Cousteau's new diving apparatus and his dive to a depth of 60 meters (PS, 1943).

With these early events, an indirect form of mutual perception began, which led to a further rapprochement shortly after the end of the war. Philippe Tailliez, the head of the

French Navy's newly formed diving group, reports that at the time they were specifically looking for experienced professionals to help build the unit, including Hans Hass (Tailliez, 1954, 69). In April 1946, Hans Hass received a letter from Dr. Bugard, a physician in the French Navy and a member of Jacques-Yves Cousteau's underwater group, inviting him to the French Riviera for a month-long underwater film project and proposing a joint expedition to the Red Sea the following year (Jung, 2003). Hass initially accepted the invitation and even offered to waive the fee, expressing his desire to meet Cousteau and to continue his underwater studies along the coasts where his work had begun (Jung, 2003, 25). Shortly thereafter, however, he reversed his decision. In his diary, Hass noted in August 1946 that he declined the invitation with reluctance in order to complete ongoing research and book projects and because he did not wish to travel shortly before the birth of his first child. A renewed invitation from France in early 1947, this time directly from Cousteau, met with the same response, as Hass politely but firmly declined in a brief handwritten letter. Hass refused for pragmatic reasons: his own projects were a priority, and he was in the midst of organizing his post-war career (see Appendix, Fig. 1).

Cousteau did not make that planned 1947 Red Sea expedition. In 1947, Cousteau's crew was occupied with refitting its vessel, *L'Ingénieur Elie Monnier*, which they used the following year, 1948, for expeditions to Tunisia and Dakar. Hass was the first to dive in the Red Sea. He did so on a self-funded expedition in late 1949 and again in 1950, documenting his experiences in his award-winning film *Abenteuer im Roten Meer* (1951, English: *Under the Red Sea*) and in his book *Manta* (1952). Cousteau finally reached the Red Sea aboard the ship *Calypso* in late 1951, and his experiences were published in the October 1952 edition of *National Geographic Magazine* (Cousteau, 1952).

The request from France was remarkable in several respects, because it makes it clear that Cousteau's network regarded Hass as a scientific and professional authority whose expertise would have been of considerable value for international projects. At the same time, it shows that the French Navy was interested in technical and scientific cooperation despite existing national rivalries. Although there was an early potential for cooperation, it remained unused and later contributed to the clear narrative separation of the two career paths.

Parallel to the developments in diving and film technology, a new international public for underwater photography and film emerged at the end of the 1950s, supported above all by the rapidly growing American sports diving scene. In the USA, this boom began a few years earlier than in Europe, and led to the founding of the *International Underwater Film Festival* in Los Angeles in 1957. At the first festival, Jacques-Yves Cousteau received the "Outstanding Underwater Photographer of the Year" award. In 1959, the same honor went to Hans Hass, who had to travel to the award-giving ceremony in Los Angeles at his own expense due to a lack of budget and sponsor. The auditorium was completely sold out, and organizational glitches led to tumultuous scenes before the start of the event. Hass was a much sought-after guest: "Hans Hass was on par with Cousteau in significant contributions to diving's beginnings. Exposure on worldwide media had left him a mysterious myth in America" (Tillman & Parry, 2001, 199).

The award ceremony in Los Angeles marked a symbolic conclusion for Hass: shortly afterwards he ended his phase as an underwater filmmaker, sold his research vessel *Xarifa* and turned completely to his natural-philosophical theoretical work. At the same time, the festival made it clear how differently both pioneers were perceived by the American audience, namely, in Cousteau, the contemporary state of the art in underwater technology and science communication was condensed, while at the same time acting as a figure of the future in the media, anticipated visually dominated publics, and Hass as a representative of a first, forgotten generation of explorers. Although both worked in the same field at the same time, there had still not been a personal encounter until then.

Rare Encounters and Growing Distance (1960s-1997)

The first documented personal encounter between Hass and Cousteau took place in London in 1962, when they both attended the World Congress of Underwater Activities. As a keynote speaker, Cousteau gave his highly acclaimed lecture *Homo aquaticus*, in which he presented his vision of a man with artificial gills who could permanently open up the underwater world and live there (Rozwadowski, 2022). His lecture lasted just 15 minutes and "put the Congress firmly on the front pages of the London and worldwide

press" (Dick, 2022, 23), although the basic idea was not new. On the third day of the conference, Hass presented his theory on the formation of atolls, which he developed during many dives and through aircraft recordings in the Maldives. A personal conversation in a larger style between Cousteau and Hass did not take place in London, as Cousteau stayed only the first day.

Hass later described the moment of their first encounter as follows: "During the break, he was naturally surrounded by a large crowd of admirers. Then he turned his head in my direction, 'waved' the people away with a gesture of his hand, and exclaimed dramatically: 'Un moment historique!'" (1997, 16). There was mutual respect, but no extensive personal conversations of significance. This encounter marked the first moment when the two ran side by side on a large worldwide stage, and it already showed their structural differences more clearly than any private interaction. Cousteau was in the spotlight, attracting all the media attention, while Hass, like the other participants in the Congress, was in his shadow. The congress also illustrated the different perceptions of the two pioneers: Cousteau as a media trendsetter, Hass as a classical researcher (see Appendix, Fig. 2).

From the 1960s, Hass was no longer active as a marine scientist and diver, but exclusively engaged in research on the biological analysis of human behavior and the elaboration of his interdisciplinary model for explaining biological, ecological and social processes, which he called Energon theory. It was not until 1970 that he reappeared, visited his former dive sites and made underwater films to finance his travels. However, they could not compete with the reach of Cousteau's films, and were shown only once, without repetition, not primarily due to their quality or format, but because by the 1970s the international television market for underwater series was already saturated by Cousteau's productions, which functioned as a de facto monopoly within the genre. Cousteau created the series *The Undersea World of Jacques Cousteau* for American television companies (ABC, Metromedia, NBC), which ran from 1966 to 1976 in 36 parts also in Europe. The series was followed by the second documentary series *The Cousteau Odyssey* from 1977 to 1982 in 14 parts.

During his travels, Hass noted the great damage that underwater hunting with mechanical weapons has already done. He therefore wrote a manifesto on their

prohibition and founded a society to pursue this goal. He sent his call to many well-known and influential divers and public figures worldwide. Many of them expressed solidarity and signed the manifesto. He sent a telegram to Cousteau in November 1971 asking him to support his efforts to ban international harpooning (see Appendix, Fig. 3). Hass sought Cousteau's symbolic authority to build political pressure and magnify its reach. However, Cousteau did not respond, possibly because at the time he was president of the American company US-Divers, an offshoot of La Spirotechnique and the world's largest harpoon manufacturers (Hass, 2016, 125).

This non-response is still regarded today as a key event that illustrates and further fuels the asymmetrical relationship between the two personalities: Hass sought selective cooperation, but Cousteau pursued an independent political strategy.

Over the next two decades, Hass was mainly concerned with expanding his Energon theory and applying it to practical problems in business. It was only in the 1990s that a relationship with Cousteau re-emerged, when Hass found that he was no longer mentioned in the common reference works on the history of diving. Hass used an invitation to the annual meeting of the Historical Diving Society, held in Whitstable, Kent, in the autumn of 1994, to a call to investigate and publicly acknowledge the priority of his underwater activities (Dick, 1995, 4).

Hass handed over to the society documents proving that he had already developed and successfully used a functioning breathing apparatus before Jacques-Yves Cousteau. Hass, then 75, went on to declare that he had refrained from publicly defending his priority claims for over 35 years. As a result, he was no longer mentioned in many international depictions of diving history despite numerous publications and films. After his withdrawal from active diving research in 1959, he devoted himself primarily to evolutionary and human ecology and deliberately left the sovereignty of interpretation over the early history of autonomous diving to others. Since his evolutionary biological work has been completed, he now sees the time to correct historical inconsistencies. Although disputes over priority issues did not correspond to his personal inclination, he stressed that a limit had been reached. Therefore, he wanted to ask the Historical Diving Society to make a factual assessment on the basis of his documents and to “set things

straight" (see Appendix, Fig. 4). Cousteau did not comment on the allegations, which could be interpreted to mean that he saw no reason to contradict Hans Hass.

Although Cousteau did not comment on the initiative, the appeal caused a stir and went through the international press (Vallintine, 1995, 8). There was a visible reaction, especially in the USA, and Hans Hass's pioneering deeds and life's work were increasingly emphasized and appreciated. There they had been virtually non-existent until then due to Cousteau's outsized media presence (Crylen, 2015, 8). Leslie Leaney, President of the Historical Diving Society USA**,** longtime friend and partner of Hans Hass and the driving force behind this rediscovery, played a special role. Leaney initiated numerous activities for the international visualization of Hass's work and founded the *Hans Hass Diving to Adventure Award* in 2001, which honors outstanding contributions to the history and science of diving to this day. In 1998, a large "Hans and Lotte Hass Film Festival" was held in Santa Barbara, where Hans and Lotte Hass were present in person. Since these years, the international perception of Hans Hass has grown significantly, but rarely beyond expert circles.

When the second and last face-to-face meeting between Hass and Cousteau took place in January 1997 during the international water sports trade fair DEMA in Orlando, both greeted each other like good old friends. Eyewitnesses tell of a warm encounter, which was marked by mutual recognition and in which neither previous rivalries nor their different career paths were mentioned. Both sat next to each other at the same table that evening, received an award for their life's work in the field of diving and underwater research and gave a speech. Cousteau addressed the importance of marine conservation, and Hass of the threat of unabated growth. The meeting was a symbolic moment: two pioneers at the end of their careers, who had marked a century of maritime exploration, were once again on stage together, not as rivals and counterparts, but as representatives of an era that was nearing its end.

This encounter in Florida was a few months before the death of Cousteau. In his obituary of their relationship, Hass said: "When I saw Cousteau in Florida at the time, he was in the best mental condition. He gave a very good table speech, but I thought to myself that he looked quite tired. When I later heard that he was very ill, I felt very sorry for him. We were very different personalities and certainly not friends. I was more

interested in underwater research, but he was more interested in sports tourism. He was a far better businessman than I was. While I had to sell books to make money, Jacques managed to get a lot of support from the French government. But in the end, there were a lot more similarities between us than differences. The love of the sea connected us, we were the ones who conquered it for sports and research diving. The sea is large and can accommodate many pioneers" (Hass, 2016, 130).

There is no surviving comment from Cousteau about Hass. Nevertheless, numerous indications suggest that Cousteau respected Hass's work and perceived him as an independent pioneer whose lines of development differed from his own. At the same time, however, Cousteau deliberately avoided any public evaluation, ranking or priority discussion. This gave rise to a historical picture in which silence is not to be understood as rejection, but as an expression of a respectful distance without enmity.

Cousteau, Hass and Academic Fieldwork: Mediatized Expeditions versus Disciplinary Science

Medialized Adventures and Academic Structures

The parallel careers of Hans Hass and Jacques-Yves Cousteau took place during a period in which marine research developed in two distinctly different but nevertheless intertwined directions. On the one hand, there were mediatized expeditions whose objectives went far beyond mere scientific observation. On the other hand, an increasingly professionalized, institutionalized and methodically standardized academic marine research was formed. Both pioneers represent this range in a special way: they moved between personal exploration, technological innovation, visual documentation and popularizing mediation, but without the structural embedding in university research programs that had simultaneously gained in importance.

Hass's approach remained more scientifically oriented. His expeditions were closely linked to zoological questions, observations of animal behavior patterns and evolutionary theoretical considerations. His early underwater films served primarily as instruments of scientific documentation (Jung, 2024). Cousteau, on the other hand,

linked scientific and technical innovations with a pronounced media self-image. From the beginning, his expeditions aimed to make the underwater world accessible to a global audience and to remove the fear of amateurs and scientists alike. While Hass understood scientific knowledge as a central motivation, Cousteau brought visual mediation, narrative condensation and emotional impact to the fore. These different focal points led not only to divergent public perceptions, but also to different forms of epistemic authority.

Hans Hass undertook two expeditions with his sailing ship *Xarifa* in the 1950s. On board were several scientists, whom he trained as divers and who carried out marine biological research in the tropical reefs. The central goal of the trips was to establish the new scientific method of diving with light, autonomous diving equipment. The ship with the necessary equipment and the two voyages financed Hass predominantly itself. Since this was a considerable burden for a private person, and in order to continue to preserve the *Xarifa* for science, Hass sought financial support from German institutions and authorities in 1957. He developed a viable concept that envisaged the rental of jobs to scientists for research trips based on the model of the Zoological Station in Naples. For this concept, they received a lot of approval from the circle of zoologists, and hardly anyone expected that the applications for funding from Hass would fail. And yet it came, completely surprisingly, like this: The rejection meant the end for further research trips with the *Xarifa*. Many years were to pass before the innovative method of scientific diving was taken up again in Germany and continued. The opportunity offered by the research ship and the new scientific method for German marine research was thus missed. This example illustrates that Hass's limited access to academic institutions was not due to a lack of competence, but to an image problem that did not allow his unconventional profile to be integrated into the academic world of the time (see Appendix, Fig. 5).

This shows another divergence between Hass and Cousteau: Cousteau's popular scientific work was not an obstacle to recognizing him as a marine scientist both in public perception and in the scientific community. Despite his popular scientific orientation, Cousteau was recognized for delivering technical innovations, maintaining institutional networks, and understanding his media work as a complement to science. Hass, on the

other hand, lacked this institutional legitimacy and he suffered from an image problem that superimposed his scientific competence.

Knowledge Cultures of Twentieth-Century Marine Research

The academic marine research of that time developed in parallel with the work of both pioneers, but largely independently of them. University disciplines such as oceanography, marine zoology or marine ecology became more professional and increasingly relied on standardized methods: instrumental measurements, laboratory-based analytics, quantitative data collections and long-term monitoring programs (Rice et al., 2001). The emphasis lay less on images or singular expeditions than on serial measurements and the reproducibility of results. At the same time, however, marine science continued to depend on cultural imagination and public fascination in order to gain social relevance and institutional support, as Antony Adler has shown for earlier phases of ocean science (Adler, 2019, 19).

Despite these differences, there were manifold interactions and reciprocal influences. Technological developments of both pioneers such as breathing apparatus, underwater cameras and lighting systems quickly found their way into scientific working contexts. At the same time, their films inspired a whole generation of young marine researchers. The popularization of the oceans significantly influenced the social understanding of marine ecosystems and created a cultural resonance space in which scientific topics gained broad relevance in the first place.

Nevertheless, the epistemic distance remained considerable. The academic claim to methodological rigour, institutional authority and disciplinary standards was only partially compatible with the dramaturgical and visual-narrative representation of the mediatized expeditions. The popular image of the “adventurer-researcher”, which both shaped, did not correspond to the structured reality of scientific practice. Conversely, both Hass and Cousteau found the administrative and often conservative research landscape to be a hindrance to their experimental, technically visionary approaches. In this sense, both stood between established cultures of knowledge: close enough to science to generate innovation, yet sufficiently distant to develop a pictorial research

tradition that largely escaped academic control. As Adler (2019) demonstrates, historical authority in marine science has never rested solely on empirical rigour, but also on the capacity to mobilize imagination, narrative coherence, and institutional visibility.

Building on this insight, Hardy (2021) further demonstrates that historical narratives acquire authority not primarily through empirical completeness, but through coherence, repetition, and institutional endorsement. This insight is particularly relevant for maritime memory, where the persistence of certain figures reflects historiographical stabilization rather than the full spectrum of scientific practice.

The historical review shows that the history of diving and underwater research did not lead linearly from pioneers to academic professionalization. Rather, two different but mutually influencing fields of knowledge emerged. The mediatized work of Cousteau and Hass opened up visual approaches, cultural ideas and technological possibilities that academic research took up and developed further. Academic marine research in turn established methodological standards and analytical depth that formed the foundation for the long-term understanding of marine systems. These popular-epic expeditions and institutionalized scientific practices did not simply compete, but interacted in uneven and often complementary ways.

This chapter provides the context necessary to understand the achievements of both pioneers beyond their personal competitive history, situating them instead within the larger field of tension between scientific practice, media representation, and technical innovation. It shows that the reception of Hass and Cousteau was determined not only by their works, but also by the structures of knowledge production in which they appeared, structures that sometimes promoted or limited their visibility. It is only through the interaction of the two systems that the historical significance of their works can be fully grasped.

Scientific-historical perspective

The era of subaquatic modernity from the 1930s as a paradigm shift

Underwater research experienced a fundamental upheaval from the 1930s onwards: new breathing apparatus, improved compressed air regulators, innovative underwater cameras and a growing scientific interest in oceanography and biology led to significant new technical and epistemological developments. SCUBA diving established itself as an independent scientific and popular field from the 1940s onwards (Jung, 1999). Of central importance for this was the new method of mobile diving without surface air supply by hose, which only became possible through a light, autonomous breathing apparatus in combination with fins and diving mask.

At this point, it is necessary to clarify a terminological usage that often leads to misunderstandings. In the English-speaking world, it has become commonplace to speak of SCUBA diving (SCUBA – Self-Contained Underwater Breathing Apparatus) when referring to mobile diving. This is problematic for two reasons: first, because SCUBA devices are usually associated with breathing-controlled compressed air systems such as the Aqua-Lung, and second, because although they are necessary, they are not sufficient in themselves for this new type of movement. Mobile diving therefore presupposes the combination of a self-contained breathing apparatus with fins and mask. The term „SCUBA diving“ thus places disproportionate emphasis on the breathing device. It is therefore necessary to point out that the mobile mode of underwater movement is independent of the specific autonomous breathing technology employed - whether oxygen, compressed air or mixed gas - since this aspect is secondary. SCUBA diving is here understood to mean autonomous, three-dimensional locomotion under water, using a self-contained breathing apparatus and without recourse to heavy underwater equipment or traditional walking-diving methods. Hass referred to this form of diving as “swimdiving”, a term that did not prevail, as well as “free diving” (Bascom & Revell, 1953), which appears conceptually appropriate but is now used exclusively to denote breath-hold diving.

This conceptual clarification corresponds closely to Hans Hass's own understanding of the innovation he helped to establish. Hass approached diving from a functional perspective, conceiving underwater movement as an integrated system of light equipment consisting of breathing apparatus, mask and fins, through which three-dimensional mobility became possible. In this view, the specific breathing technology employed - whether oxygen, compressed air or later mixed gas - was of secondary importance. Such developments represented evolutionary refinements that extended depth and duration, but did not constitute a fundamental innovation with regard to the diving method itself. The decisive break lay elsewhere: in the shift from heavy, ground-bound walking-diving to a form of swimming-based, autonomous locomotion under water, a change that marks not merely a technical advance but a profound transformation in underwater practice and culture. From this perspective, Hass did not consider the breathing-controlled compressed air apparatus developed by Jacques-Yves Cousteau and Émile Gagnan in 1943 to constitute the decisive innovation. Rather, he regarded it as a significant technological refinement within an already established mode of underwater movement. The genuine innovation, as Hass consistently emphasized, lay in the cultural and methodological shift brought about by swimming-based, autonomous diving itself.

The consequences of this shift were far-reaching. The transformation from walking-diving to autonomous, swimming-based diving fundamentally altered the diver's role: from a heavily equipped underwater laborer to a mobile, self-determined actor. This newly gained mobility enabled forms of scientific observation, photographic documentation and sporting practice that had previously been impossible under the constraints of ground-bound diving.

This transition from walking-diving to autonomous, swimming-based SCUBA Diving led to a paradigm shift in the scientific exploration of the sea. Scientific research was given new opportunities because researchers could now operate under water independently of location and for a longer period of time. According to Riccardo Cattaneo-Vietti and Angelo Mojetta, this autonomous diving with light equipment as a research method now plays an "essential role" in marine biology, opening up "unexpected horizons in science" and thus ushering in a scientific revolution: "The direct

access to underwater habitats determined a scientific revolution, by allowing a considerable advancement of the marine world's knowledge and constituting an approach that no surface-operated instrument can ever match" (Cattaneo-Vietti & Mojetta, 2021, 1).

In this process from walking-diving to SCUBA diving, values, social structures and self-understandings within the diving community fundamentally shifted, so that in addition to the paradigm shift, a cultural change can also be spoken of. This change was reflected not only in the departure from the industrial working style of the traditional diving device, but also in the emergence of a new, mobile self-image of the researcher underwater. In addition, diving opened up to a wider public, creating a diverse community of sports, recreational and science divers. At the same time, new forms of communication and training emerged that institutionally anchored modern diving. Overall, diving thus changed from a specialized professional practice to a culturally and medially visible form of nature-related exploration in an extreme environment.

In this dynamic environment, Jacques-Yves Cousteau and Hans Hass appeared, but from different cultural spaces: Cousteau stood in the tradition of a French maritime culture, characterized by colonial practice, strong naval institutions and state research interests (Monaques, 2016); Hass, on the other hand, came from the German-speaking scientific area, which before 1945 was ethnologically-biologically oriented, had a limited validity in marine research and lost considerably in international importance after the lost Second World War. These different starting conditions significantly influenced the subsequent global perception of both researchers.

Both Hass and Cousteau belonged to the generation that converted mobile, autonomous diving from rudimentary experimental forms into a technically and scientifically functional process. However, their early work in the 1940s differed significantly in goal and methodological approach. In 1942, Hans Hass, as a zoologist, developed his diving method with an oxygen rebreather from Dräger in a highly biological context. His goal was to observe the natural behaviors of marine animal species as unaffected as possible and to expand marine research through direct underwater studies. In addition, the general fear of the sharks had to be reduced. Already in 1942, he used it in the Aegean for scientific work (Hass, 1948; Jung, 2026).

Jacques-Yves Cousteau initially focused on practical diving and technical usability for film and naval missions. The great importance of the production of underwater films for Cousteau can be seen in the fact that his former logo represented an octopus whose arms consisted of film strips.

Cousteau was embedded in the institutional resources of the French Navy. The development in 1943 by the French company La Spirotechnique (from 1990 “Aqua Lung International”) after the war of his compressed air tank with breathing regulator, which was appropriately called “Aqua-Lung” for the marketing logic, marked the decisive turning point of his career and opened the way to global marketing (Leaney, 1997, 24).

The Aqua-Lung was not only a considerable technical achievement, but above all an industrial product that was distributed worldwide and linked Cousteau's name to the global diving equipment culture (Bascom & Revelle, 1953). The potential for commercialization of Hass and Cousteau's technologies was very different, with long-term effects on presence, perception and branding. These differences in the history of technology set in motion the divergence that later assumed medial and economic dimensions.

The establishment of SCUBA diving as a new method fundamentally changed marine research. It was not the technical equipment alone that was the decisive factor, but the associated new flexible mobility. Caves and wrecks could now be explored, as well as steep slopes. Likewise, for example, fishing nets could be examined in the open space. Long before human spaceflight, SCUBA divers functioned as “spacemen” of the underwater world, operating in an extreme environment accessible only by means of autonomous life-support systems (see Appendix, Fig. 6).

Hass and Cousteau’s diving developments differed in systematics, scientific depth, and application logic. Until 1954, Hass preferred to work with oxygen rebreathers that functioned quietly and without air bubbles but were technically more demanding and not suitable for great depths. His oxygen rebreathers, underwater cameras, and flash devices were usually developed alone or in small, improvised teams, reflecting a highly individualized mode of technological innovation. Only the underwater camera „Rolleimarin“ reached mass production and achieved worldwide success. In recognition

of his scientific achievements, Hass was awarded Austria's highest science distinction, the Austrian Cross of Honour for Science and Art, in 1997.

These differences in equipment, development scale, and modes of production were not merely technical or biographical distinctions; they shaped both the conduct and evaluation of underwater research and the ways in which such exploration later entered and persisted within broader maritime memory.

From the perspective of institutional marine biology, the scientific stringency characterizing the work of Cousteau and Hass followed different logics. The marine biologist Hans Fricke, a contemporary of Cousteau, critically noted that many of Cousteau's experiments did not meet established standards of scientific rigour, remarking that "most were bad" (Fricke cit. in Leinemann, 2015, 40). Rather than constituting a wholesale critique of Cousteau's achievements, this assessment highlights the structural tension between exploratory, media-oriented research and the methodological expectations of academic marine science.

Marine conservation and ecological positioning of Hass and Cousteau (1950s-1990s)

The second half of the twentieth century was marked by a growing awareness of ecological crises, overfishing, pollution and the increasing anthropogenic pressure on the oceans (Shor, 1978, 13). Both Hass and Cousteau appeared in this phase as public voices for the protection of marine ecosystems, but in strikingly different forms, with diverging models of impact and in different historical moments.

Beginning in the late 1960s, Cousteau increasingly became a moral authority in international marine conservation. This change was strategically, discursively conscious and institutionally supported. He publicly opposed whaling, oil pollution, coral extinction, nuclear testing and industrial marine pollution (Cousteau, 1971). He formulated for the first time the narrative according to which the future of man begins in the sea, but can also end there, a rhetorical condensation that once again appears in media and politics generated a high response

In parallel, Cousteau gained institutional influence: he worked closely with UNESCO and the United Nations, acting as an advisor to international bodies and using appearances such as those at his counter-summit to the 1972 World Environment Conference in Stockholm (May & Daly, 2015, 66) to establish himself as a diplomatic figure of global environmental activism. The founding of the Cousteau Society in 1973 also created a non-governmental institution of influence with hundreds of thousands of members worldwide, which financed campaigns, expeditions and broad-based public relations in marine conservation. As a result, Cousteau's role increasingly shifted from researcher and filmmaker to eco-entrepreneur of a new international environmental movement. At the same time, his films from the 1970s onwards systematically used dramatic and moral narratives such as endangered species, polluted oceans and the responsibility of humanity, thus shaping the ecological consciousness of several generations. The combination of institutional entrenchment, global media presence and emotionalized environmental ethics made Cousteau the world's most visible figure in marine and conservation, with an ecological authority that was historically nearly unique and comparable only to figures like Rachel Carson (1907-1964) or later David Attenborough (born 1926). Cousteau thus became the most famous environmental figure in marine research worldwide (Egerton, 2017).

Hans Hass was also ecologically engaged, but earlier than Jacques-Yves Cousteau and in a significantly different form than him (Jung, 2023). As early as the 1950s, he warned against human intervention in marine ecosystems, though without the emotionalising framing that would later shape Cousteau's environmental communication. In his early books and in particular his film *Unternehmen Xarifa* (1954, Under the Caribbean), Hass emphasized the beauty of the underwater world and its worth of protection; at the same time, he presented sharks not as a threat, as Cousteau and others still did at the time, but as integral parts of the ecosystem that do not prevent human access.

The Film *Unternehmen Xarifa* acts as a bridge, not only from a film-historical point of view, but also from the perspective of environmental protection (Hediger, 2021). It represents the link between the first generation of underwater films, in which the sea is seen as an object for violent conquest and economic, colonial exploitation, and a new

generation with a different perspective. The focus here is on raising awareness of the importance of the sea for humanity.

However, Hans Hass's political reach remained limited, as he worked as an amplifier in the 1950s largely without international institutions or NGOs. While Cousteau increasingly became an activist, Hass remained more technology-oriented: his innovations primarily served scientific observation on the seabed and not political mobilization. It was not until the 1970s and until the end of his life that Hass expressed himself increasingly explicitly on general environmental policy issues. This happened at a time when Cousteau's global role was already firmly established.

Today, Jacques-Yves Cousteau is culturally almost regarded as the “inventor of marine conservation”, a historically imprecise impression that is understandable due to his media presence. Hans Hass, on the other hand, is perceived much less often as an ecological actor, although he made significant scientific contributions and was even ahead of Cousteau in several areas, such as the anti-harpoon movement. The decisive difference lies in the respective “resonance space” or in the availability of structures. Cousteau had institutional support, enormous media presence and a global symbolic power that strengthened his messages worldwide. Hass, on the other hand, brought greater scientific depth, but did not have a comparable international amplifier. This asymmetrical perception has left lasting traces in global memory and continues to shape how marine exploration is remembered today.

Hans Hass and Jacques-Yves Cousteau came from different research cultures that decisively shaped their careers and their subsequent perception. From the beginning, Hass was strongly biologically and ecologically oriented. As a zoologist and behavioral scientist, he sought direct access to the underwater world in order to observe the natural processes and interactions of marine organisms as unadulterated as possible. His early contributions to ecosystem research made him a pioneer of behavioral biology in the sea, focusing on the energetic relationships and adaptation mechanisms of living beings. He gave subsequent generations of researchers access to research on the sublitoral.

Cousteau, on the other hand, initially developed his work from a technology-oriented and exploratory attitude. He was less interested in the scientific detail and the research method than in the practical usability of the diving technique and the cinematic

development of the ocean. Only later, as the global environmental movement formed, did his approach transform into an ecological-moral narrative that made him a moral instance of marine conservation.

An essential factor for the later marginalization of Hans Hass can also be attributed to his Energon theory, a universal model for explaining human and animal action, which he developed between 1960 and 1970, and which led to a break in his previous career. Since this theory was hardly accepted by mainstream science, it increasingly led Hass into an outsider position, overshadowing his reputation as a marine explorer. In contrast, without such irritation, Jacques-Yves Cousteau consistently moved within popular and scientifically accepted discourses of marine research and environmental protection, which stabilized his public perception and influence in the long-term.

This created a striking difference in perception: Cousteau became a “advocat of the ocean”, which sensitized humanity to the endangerment of the oceans with haunting images and appeals. Hass, on the other hand, remained the “ethologist of the seas”, who opened up the underwater world with scientific precision and analytical view, without the moral activism that gave Cousteau worldwide resonance. Overall, with regard to the divergences in marine protection, one can state: Hass articulated ecological concerns at an earlier stage and from a biologically analytical perspective, while Cousteau succeeded in translating ecological awareness into a globally resonant moral and political narrative. This difference continues today and shapes the culture of remembrance of marine conservation.

Technology-historical perspective

Cousteau's industrialization of diving. From Invention to Global Market

The technological development of modern diving has not only been shaped by groundbreaking inventions, but above all by the ability to transfer innovations into industrial production and distribution processes, that is, by their diffusion (Rogers, 1962, 160). In this sense, diffusion determines not only the technical adoption of innovations, but also their long-term cultural visibility and integration into collective practice.

From this perspective, Jacques-Yves Cousteau's special contribution to the history of underwater research can be redefined: His greatest achievement lay not so much in the original technical invention of new systems, but in the consistent industrialization of existing technologies.

Together with the engineer Émile Gagnan, Cousteau developed the Aqua-Lung in 1943 on the basis of predecessor designs (Jung, 1999), a breathing regulator system that, through close cooperation with the French industrial group Air Liquide, became the first worldwide series-produced diving equipment for everyone, according to Rozwadowski (2018, 192). The Aqua-Lung convinced with its ease of use, robust safety technology, cost-effective production and modular expandability. The decisive factor, however, was its global marketability: it was the first diving system that was not primarily designed for work, research or military purposes, but for an emerging leisure and sport market. The market launch of the Aqua-Lung was in France 1946, England 1950, Canada 1951 and USA 1952.

With the Aqua-Lung, Cousteau created a technological product that simultaneously became the starting point for a new economic and cultural ecosystem. Diving schools and certification organizations institutionalized standardized training paths for the first time. Associations, tourism companies and special military groups adapted the device for different fields of application. Recreational diving has evolved into a global phenomenon whose infrastructure, from equipment to didactics to marketing, goes directly back to Cousteau's industrialisation strategy. “Civilians, rank beginners, women - and even children - joined former frogmen as undersea explorers” (Rozwadowski, 2013, 4).

The Aqua-Lung became a cultural symbol of the democratization of access to the underwater world, comparable to the Cessna 172 in aviation, the most built aircraft in the world, which since the 1950s changed flying from the exclusive sphere of military and professional pilots and made it affordable for a broad public. Both artifacts stand for technical solutions that not only opened up new spaces of experience, but also shaped the cultural imaginary: the sea as an explorable habitat and the sky as an accessible dimension of human freedom.

Millions of people have since independently experienced the submarine world for work, leisure and health, and this mass experience shaped collective memory. Cousteau

was able to embed his technical solution so strongly in media, scientific and economic structures that he became the world's best-known environmental figure in marine research. The capacity for industrialization of its innovation has been the key enhancer of its public visibility.

Hans Hass as a scientific innovator. Brilliance without industrial resonance

With regard to the economic exploitation of his inventions, Hans Hass, apart from the camera “Rolleimarin”, could achieve nothing comparable. Contracts he concluded in 1942 with the Viennese company Semperit for the production and marketing of fins and diving goggles could no longer be implemented due to the shortage of rubber caused by the war in Germany. The company Dräger, which mass-produced Hans Hass's lightweight oxygen rebreather after the war under the less effective name “Kleintauchgeraet Type 138” (engl: “small diving gear Type 138”) and in the 1950s “Delphin”, did not recognize the existing potential and literally slowed its marketing.

In contrast to Cousteau, Hans Hass pursued an innovation logic that was primarily geared towards scientific efficiency and technical precision. His most important developments, such as early underwater cameras, optimized heliox-rebreathers and lighting systems for underwater film recordings, as well as vibration generators for attracting sharks and shoals of fish, emerged as tailor-made solutions for concrete research problems. They were technically highly developed, but designed as individual products, without systematic industrial exploitation or market penetration.

Hass lacked the structural prerequisites that Cousteau could use, namely a strong industrial partnership, a scalable target market and a globally functioning distribution system. Rebreather technologies were not suitable for the leisure sector as they are expensive and their use required specialized training and extensive safety measures. The underwater cameras and lighting systems were also highly specialized tools that were initially used primarily in scientific documentation. They fulfilled important tasks, but did not yet open a mass market.

This pattern shaped Hans Hass's entire career: enormous technical creativity, but low industrialization potential. His innovations were recognized within the professional

world, but without economic scaling, their social influence remained limited. While Cousteau established an international brand by combining technology and market mechanisms, Hass, in the role of the scientific pioneer whose devices were tools for experts, did not remain products for the general public.

This divergent logic of innovation has long-term consequences for the culture of remembrance and today's diving practice. Cousteau's Aqua-Lung established a globally uniform standard equipment that is still used today in training, tourism and SCUBA diving. Rebreather systems like those of Hass, on the other hand, have remained in specialized fields such as research dives, technical deep diving expeditions or special military applications.

In historical perception, this leads to a paradoxical situation: Although Hass was formerly a pioneer of cultural change in various areas of underwater technology, Cousteau is considered the “inventor of modern diving”. The reason lies not in the technical superiority, but in the industrialization potential and global reproducibility of its innovations. In collective memory, Hass remains a visionary researcher and film pioneer, while Cousteau is regarded as an icon of diving practised on a global scale. His media reach decided on the iconization. This will be discussed in the following chapter.

Media-historical perspective

Media production, film aesthetics and marketing logics

This chapter argues that television, more than any scientific or technological factor, functioned as the decisive amplifier of Cousteau’s legacy and as a structural mechanism of exclusion for alternative pioneers such as Hans Hass.

Cousteau's media ecosystem, consisting of television, series logic and global licensing markets, formed the central key to the differing worldwide renown of Jacques-Yves Cousteau and Hans Hass. While Hass acted primarily as a scientist and as a single producer, Cousteau used television, which from the late 1950s became the leading global medium (Abramson, 2007), as a structural basis for a comprehensive media empire. This was based on clearly recognizable, industrially reproducible principles: serial narrative

forms with seasons and episodic formats, dramaturgical patterns that combined expedition, danger, knowledge and moral reflection, as well as the use of professional, memorable teams of divers, dramaturges and cutters. In addition, there was close cooperation with major US broadcasters, in particular CBS and ABC, which not only secured high production budgets, but also ensured international distribution, which brought Cousteau's productions to almost all Western countries. This was complemented by global dub cultures that enabled synchronization in many languages, by accompanying book series, merchandising formats (T-shirts, hoodies, caps) and the use of the *Calypso* as a globally recognizable symbol of underwater research By integrating exploration, audiovisual media, and institutional authority, Cousteau translated scientific practice into a durable narrative form whose visibility would later stabilize international maritime memory.

On the contrary, Hass engaged with serial television production at an early stage, albeit within a markedly different scientific-documentary logic. Rather, Hass employed a form of seriality oriented toward scientific continuity and documentation, rather than toward emotional escalation, recurring protagonists, or brand-driven repetition. On the contrary, Hass produced the successful six-part BBC series *Diving to Adventure* (1956) as well as the 26-part series *Expedition ins Unbekannte* (1958-1962) for German SWF and the British BBC. However, these productions followed a markedly different logic: they were conceived as scientifically sober, black-and-white documentary compilations with limited emotional dramaturgy and minimal personalization. This aesthetic restraint reflected deliberate scientific priorities rather than limitations in media competence or audience appeal.

Cousteau thus operated within a media and economic system that was not available to Hass: international licensing rights, repeat fees, global distribution chains, sponsorship by large industrial groups and TV series as exportable brand products. This professional and industrially scalable media structure gave Cousteau a cultural status that extended far beyond the scientific sphere and led to a de facto monopolization of the visual underwater world. In contrast, Hass was required to concentrate multiple functions within a single individual, acting simultaneously as film producer, scientific researcher, and expedition leader, while also assuming personal responsibility for

securing the financial resources necessary to realize each expedition and production. This structural condition significantly limited the scalability, continuity, and institutional stabilization of his media output.

When Hass tried to gain a foothold in television again in the 1970s, many broadcasters had already covered their underwater formats through Cousteau's productions, interest in competing offerings was low because Cousteau had long since dominated and occupied the genre. This situation reflected a structurally saturated media market rather than any decline in documentary quality or scientific relevance. Cousteau's visibility thus did not merely coexist with alternative approaches but actively shaped the boundaries of what remained televisually imaginable and institutionally investable.

The BBC Audience Research data from 1956 show that Hans Hass's series *Diving to Adventure* achieved reaction values that were directly at the level of the previously broadcast Cousteau programs (see Appendix, Fig. 7). Crucially, this equivalence in audience response demonstrates that the later divergence in global recognition cannot be explained by format, quality, or audience appeal, but must be attributed to long-term structural asymmetries in media integration and institutional continuity**.**

Hans Hass began and experienced the climax of his career as a documentary filmmaker. This trajectory reflects a media-historical transition from cinema-centered documentary production to television-based serial ecosystems, rather than an individual failure to adapt. In the 1940s and 1950s, his films reached an audience of millions there, but with the rise of television, cinema documentation rapidly lost importance from the 1960s onwards. Television became the new leading medium, the new campfire, around which the family gathers. Cinemas increasingly specialized in feature films, documentary formats migrated to late and little prominent television stations, and budgets for such productions shrank significantly.

The underwater film productions of the twentieth century are in a longer line of development: They continued a medialization of the sea that began in the 19th century, which opened up first public insights into submarine habitats with show aquariums (Brunner, 2011) .With film technology and later television, this visualization shifted into mass media and globally networked forms.

Hass's films were oriented in terms of content and aesthetics towards large, monolithic expedition narratives such as epic dramaturgies, each one extensive work per multi-year journey, making them less compatible with the emotionally dramatized, personality-driven serial television formats that became dominant from the 1960s onwards, despite their formal serial structure. Such narratives were typically conceived as self-contained knowledge units, offering limited modularity or repeatability within emerging global television programming structures. His 26-part film series *Expedition ins Unbekannte* (1958-1962, engl: The Underwater World Of Adventure) by Hans Hass was shot in black and white material for cost reasons and drafted in terms of content as a sober scientific documentation. When the media landscape changed fundamentally, Hass had neither a strategic TV partner nor a recurring series format nor its own media company, apart from selective cooperation with the regional broadcaster SWF and the BBC. Its production structure was therefore not sustainable for the new media economy.

A factor in the film productions of Hans Hass that is often underestimated in media-historical analysis is the central role of his wife, Lotte Hass (1928-2015). From the early 1950s onward, she was not only present as an underwater model, but also an integral part of the visual, organizational, and narrative structure of Hass's films, and significantly contributed to their economic success, which was demanded by the publishers (Hass, 1972). Her appearances on camera enabled image compositions that emphasized intimacy, tranquility, and interaction with the underwater world, clearly distinguishing themselves from contemporary depictions that co-opted the underwater world. Furthermore, Lotte Hass was involved in organizing the expeditions, thus assuming a hybrid role between production and staging.

From a media-historical perspective, this constellation points to an alternative production model: While Jacques-Yves Cousteau's media ecosystem was highly hierarchical, institutionally embedded, and geared towards serial television formats, Hans Hass's films were based on a small, personalized production community in which risk, responsibility, and operational tasks were distributed among a few key players. This production dynamic corresponds to what Erll has described as the role of media circulation in stabilizing cultural memory beyond disciplinary or national contexts (Erll, 2011, 113). Roediger et al. address such mechanisms of collective memory by examining

how repetition and circulation contribute to the stabilization of memories over time (2009, 138).

Lotte Hass's role within these film productions is ambivalent from a scientific-historical standpoint. As part of a co-productive media arrangement, she contributed significantly to the films' popularization and commercial appeal. Her presence on camera enabled a visual aesthetic that generated intimacy, identification, and narrative accessibility, thereby increasing the productions' connection to popular cinematic contexts of the 1950s. At the same time, precisely this form of popular dissemination reinforced a structural distancing from academic scholarship. To the extent that the films relied on visual emotionalization, personalization, and narrative dramaturgy, they lost epistemic legitimacy within the academic field. The aesthetic and narrative opening associated with Lotte Hass thus had a twofold effect: it secured economic success and public reach, but at the same time favored the perception of Hass's underwater research as popular science and therefore as marginal compared to discipline-institutionalized research practices.

A comparative examination of the roles of Lotte Hass and Simone Melchior Cousteau, Jacques Yves Cousteau's first wife and his closest collaborator for decades, helps to clarify how profoundly gender relations shaped the construction of maritime memory and, in the long run, contributed to the markedly different legacies of these two pioneers.

In Hans Hass's films, Lotte Hass was visibly present from the very beginning. She appeared not only as an underwater model, but also as a co organizer of expeditions and as the visual focal point of many productions. Her on screen presence, often described as calm, approachable, and intimate, played a decisive role in making the underwater world emotionally accessible to a broad audience. Contemporary publishers and producers actively encouraged this form of personalization, aware of its commercial appeal. Yet this strategy was not without consequences. The more strongly the films relied on emotionalization and individualized imagery, the more easily they could be positioned, particularly within academic contexts, as popular rather than scientific contributions.

The situation was markedly different in the case of Jacques Yves Cousteau. Simone Melchior Cousteau largely remained in the background of public representation, despite her central role in the early history of modern diving (Cardone, 1997). She was among

the first women to dive using SCUBA equipment, participated in the testing of early Aqua-Lung prototypes in 1943, and later became the first female aquanaut during the Conshelf II project in 1963. Her family's connections to Air Liquide proved crucial in accelerating the development of the diving regulator. She also mobilized private financial resources to sustain the *Calypso*'s expeditions and, once at sea, exercised extensive organizational authority. Known on board as "La Bergère" (engl. "The Shepherdess"), she oversaw logistics, mediated conflicts, provided medical care, and ensured the day to day functioning of what was often a difficult all male crew. Despite this, she appeared only rarely in public and seems to have deliberately avoided media attention. Jacques Cousteau himself later recalled that she was happiest observing the sea from the crow's nest, far removed from cameras and press coverage.

In addition to these practical responsibilities, both spouses also performed – if necessary - important forms of public mediation that contributed to the stabilization of their husbands' professional reputations. On several occasions, they intervened in public or semi-public arenas to address external challenges to these reputations, for instance Lotte Hass 1952 in legal proceedings concerning remuneration related to the film *Adventures in the Red Sea*, and Simone Cousteau 1976 in response to public criticism regarding an alleged tension between Jacques Cousteau's environmental advocacy and his simultaneous executive role at U.S. Divers, a company economically involved in the sale of spearfishing equipment.

Seen together, this contrast is revealing for the broader analytical question of maritime memory. Lotte Hass's visibility undoubtedly contributed to the early popularity of Hans Hass's films, but it also increased the distance between his work and institutionalized scientific recognition, which may have affected his long term academic positioning. Simone Cousteau's relative invisibility, by contrast, made it possible to construct Jacques Cousteau as a singular and uncontested heroic figure, an image that aligned particularly well with the requirements of global media narratives. In both cases, women performed indispensable forms of scientific, organizational, and affective labor. Yet while one form of contribution became publicly marketable, the other remained largely unseen, stabilizing the system from behind the scenes.

These observations point less to a closed interpretive conclusion than to a field that still awaits systematic exploration. While the present study can only sketch these dynamics, a sustained gender historical and intersectional analysis remains largely absent from maritime history and memory studies. Future research could examine more closely how women such as Lotte Hass and Simone Cousteau, alongside numerous less visible contributors, shaped processes of canonization, navigated strategies of visibility and invisibility, and thereby influenced the long term formation of maritime remembrance. Addressing these questions would not simply add missing figures to existing narratives, but would fundamentally deepen our understanding of how maritime memory has been produced, stabilized, and transmitted over time through gendered regimes of visibility within media ecosystems**.**

Narrative styles and cultural self-staging

Jacques-Yves Cousteau developed a unique form of self-staging that combined scientific authority with poetic language, moral messages, and a humanistic ecology, as it were a "advocate of the oceans". This mixture hit precisely the social nerve of the 1960s and 1970s, an era in which the environmental movement arose, awareness of species and resource conservation grew, new forms of global connectedness were sought, and popular scientific TV formats reached a wide audience. In this cultural climate, Cousteau succeeded in breaking away from the role of a mere researcher or filmmaker and becoming a globally connectable figure who simultaneously embodied science, activism and pop culture. According to Leinemann (2014, p. 39), Cousteau superficially explored the sea, but in fact incented it and thus inspired a generation of future scientists.

As a technical observer in style and in his public perception, Hans Hass remained much more committed to the style of the academic biologist and technology-savvy scientist. He appeared as an analytical documentarian and athletic-exploratory diving pioneer whose films were more explanatory, technically oriented and scientifically precise, but far less morally or emotionally charged than those of Cousteau. In the post-war German media landscape, this approach worked, but the emerging global media market increasingly demanded narrative myths, symbolic figures and emotionalizing

stories, not just biological analyses. Thus, in US media, Hass was perceived primarily as a scientist, while Cousteau was considered a “storyteller”, and storytellers dominated the global media markets.

Cultural policy perspective

Institutional and geopolitical framework

After 1945, France pursued a clear ocean policy agenda and, as a former colonial power, sought to secure its global maritime interests in the Indian Ocean, Pacific and Mediterranean scientifically and technologically. Cousteau's work blended perfectly into this strategy and into the French research landscape. Through collaborations with the French Navy, the Office français de recherches sous-marines (OFRS) and later international organizations such as UNESCO, he gained an institutional foundation that gave his expeditions both scientific credibility and financial stability. His famous research vessel *Calypso*, originally a minesweeper of the British Royal Navy, was converted into a mobile maritime laboratory by industrial promoters and government support. This institutional support laid the foundation for decades of continuous scientific and media work.

Hans Hass never received comparable structural support in Austria and Germany as Cousteau did in France. His career was repeatedly marked by political and institutional discontinuities. Before 1945 he produced his first two films *Pirsch unter Wasser* (1940, engl. Stalking under water) and *Menschen unter Haien* (1947, engl. Men and sharks), in a politically charged environment, while the scientific infrastructures for marine research in Germany were increasingly reduced due to the war. After 1945, the German-speaking scientific area was internationally isolated, full of institutional ruptures and gaps; Expeditions could only be funded through private and few public sponsors, and the scientific funding structures focused on inland and fisheries research rather than global oceanographic exploration. In addition, the political blemish of his works before 1945 made the international reception of his works more difficult. While Cousteau established a continuous research organization, Hass worked primarily on a project basis for

decades, depending on film sales, sponsors and private marketers, which prevented long-term strategic planning and constituted a decisive economic disadvantage.

Influence of cultural narratives

The influence of cultural narratives plays a central role in the different perceptions of Jacques-Yves Cousteau and Hans Hass. Cousteau embodied the classic discoverer myth: With his red cap, the clearly coded pictorial worlds and the dramaturgical staging of his expeditions, he fulfilled the collective need for a hero figure that combines adventurousness, pioneering spirit and moral orientation. His performances created iconic images that deeply inscribed themselves in cultural memory, making his person emotionally chargeable for generations to come. Hass, on the other hand, seemed much more intellectual and scientifically distant in the public image. He was missing, apart from his explorer beard, those visual markers and mythological gestures that appeal to a wide audience and form an easily recognizable media figure.

Since the 1970s, Cousteau's role has increasingly shifted toward a moral instance of global environmental activism. He staged himself not only as a researcher, but as an advocate of the oceans, formulating political demands and being perceived as a moral authority. This narrative foundation of “the researcher who becomes an ethical admonisher” gave him enormous cultural impact. Hass, on the other hand, continued to focus on theoretical modelling, ecological energy budgets and technical innovations. His work was scientifically demanding but less connectable to a mass audience because it offered no clear moral guidelines and did not resort to an emotional narrative.

In the long-term, these differences led to Cousteau's name symbolically standing for the protection of the oceans, while Hass remained anchored above all in professional circles despite its high scientific significance. The discoverer myth and moral narrative generated a cultural resonance around Cousteau that made him a global icon, while Hass's sober, model-based and less visual approach limited his international visibility. As a result, the narrative dimension still shapes the evaluation of both pioneers and influences how strongly their respective contributions continue to affect the public consciousness.

International Science Policy and Symbolic Capital

Jacques-Yves Cousteau had an exceptionally strong symbolic power that extended far beyond his scientific achievements. He has been honoured with major international awards such as the UNESCO Prize, the World Food Prize, the French Order of Merit, several honorary doctorates and Oscar awards, and even nominated for political bodies. These honours anchored him as the public face of France in global environmental and marine protection and gave him a symbolic capital that fed not only from research, but also from cultural, political and media sources. Cousteau thus became an international leading figure whose authority was both morally and politically charged and which enabled him to represent ecological concerns with considerable social impact.

Hans Hass also received a large number of awards, but these mainly concentrated on the German-speaking area, the academic sector and specialized professional societies. His recognition thus remained fragmented and institutionally limited. Unlike Cousteau, he only appeared late as a moral authority; rather, he was a scientific specialist whose focus was on behavioral research, the theory of the energy balance in the ecosystem and technical innovation. This content orientation led to the fact that his symbolic capital had a less broad impact and developed only limited social or political appeal. The absence of comparable media infrastructures and institutional amplification limited the consolidation of Hass's work within international maritime memory, despite its recognized scientific significance.

While Cousteau became a universal symbol of marine conservation through his global presence and ability to embed complex ecological issues with simple comparisons in political and cultural narratives, Hass's notoriety remained more tied to scientific discourses and regional contexts. This explains why Cousteau's contribution has a broader cultural resonance to this day, while Hass is less iconic in international comparison despite its profound scientific relevance.

Socio-economic perspectives

Institutional strength versus individual project work

Founded in 1973, the Cousteau Society evolved into a multinational media, research and environmental company that went far beyond the person of Jacques-Yves Cousteau. With clear corporate structures, professional fundraising, international sponsorship partnerships, hundreds of thousands of members and global PR departments, the organization had a stable legal and financial basis. In addition, there was a systematically maintained brand portfolio and a professional licensing policy that positioned Cousteau's name globally. This institutional strength enabled stable incomes, political influence, a wide-ranging international network and continuous cultural capital formation. The Society made Cousteau a superpersonal brand that also functioned independently of his physical presence and could continue to exist after his death. Vintage Cousteau Society T-shirts from the 1970s/80s are now coveted collectibles, member certificates of the Cousteau Society from the 1980s, partly signed, are now considered valuable rarities.

Hans Hass worked economically and organizationally in a fundamentally different model. Since he did not set up a foundation, global sponsoring structures, a membership organization or a permanently institutionalized crew, his work remained closely tied to his own person and his active ability to act. Every expedition, every film and every book had to be re-financed, re-organised and re-communicated. Although this project-based way of working offered him great intellectual freedom and thematic independence, it made him economically vulnerable. With the change in media markets from the 1960s and 1970s, such as increasing competition, growing professionalization and changing viewing habits, this model lost its carrying capacity. While Cousteau's institutionalized brand persisted even under changing conditions, at Hass, the economic foundations broke away, clearly limiting its public visibility and long-term cultural reach. As a consequence, a structural difference arose that continues to have an effect today: Cousteau's legacy was globally multiplied by stable institutions, while Hass remained a lone fighter despite great scientific significance, whose presence had to be repeatedly recreated.

Cousteau's current image from a socio-economic perspective

In socio-economic terms, Jacques-Yves Cousteau's current image is noticeably marked by ongoing family disputes over the commercial and institutional management of his heritage. While Cousteau's scientific achievements and media impact remain undisputed, economic conflicts of interest within the family have increasingly affected the public perception of the Cousteau brand. Issues such as copyright and trademark rights, royalties, control over film archives and the strategic orientation of the Cousteau Society are regularly taken up by the media (e.g., Premack, 2022). These conflicts are an expression of the high economic and symbolic capital values associated with Cousteau's estate: his name stands not only for environmental pioneer work, but also for a globally marketable cultural product.

The disputes have a direct impact on the institutional capacity of the Cousteau heritage. The use of his name and works is now more regulated, legally more complex and sometimes controversial. This creates economic uncertainty for production companies, foundations or scientific projects: collaborations or publications intended to bear Cousteau's name are sometimes delayed or completely discarded due to potential legal risks. Film festivals often have to do without the performance of his films, and book editions on historical photographs, because no clear contact person for licensing is identifiable. This reduces the cultural visibility of its heritage in the media and education market, although demand for Cousteau content remains high.

At the same time, however, it shows that Cousteau's social and scientific prestige remains largely stable among the general public. For many, particularly younger generations, he remains the iconic figure of underwater research, while family-internal conflicts tend to play a background role. The socio-economic effects thus have a stronger impact on the institutional level (publication practice, brand management, licensing markets) than on popular cultural perception.

In comparison, Hans Hass is less affected by such developments: his estate is significantly less commercialized, the rights management is more clearly structured and the economic interests are less. As a result, its legacy is institutionally more stable and

less susceptible to publicly visible conflict. This lower economic charge leads to a quieter estate culture and has a more lasting positive influence on its image.

Overall, Cousteau's reputation as an environmental pioneer remains unbroken, but the socio-economic dimension of his legacy is partially overshadowed by family conflicts and contested brand structures. While the public continues to see the mythologized adventurer, the pressures are particularly evident in the economic, legal and institutional spheres that determine the use and transfer of his cultural capital.

Synthesis: Why Cousteau became world famous, and Hass did not

Cousteau: Structural amplifiers, media iconization and global impact

This analysis does not seek to hierarchize individual scientific merit or to diminish Cousteau's achievements. Rather, it examines how differing institutional, media, and geopolitical conditions shaped the long-term visibility and remembrance of comparable pioneering contributions.

The comparative analysis of the careers of Jacques-Yves Cousteau and Hans Hass shows that their different recognition does not primarily result from the quality of their scientific achievements, but from a complex interplay of external factors. While both pioneers pioneered technological innovations and their evolution, opening up the underwater world to the public, their reception and legacy evolved in starkly divergent trajectories.

At the core of this divergence lay Cousteau's entrepreneurial engagement with emerging television markets, which enabled him to integrate geopolitical opportunity, institutional support, media staging, and economic scalability into a coherent and self-reinforcing system of visibility.

Jacques Cousteau's rise to become a global icon was based on several interlocking mechanisms. The geopolitical situation played a central role: France emerged after the Second World War as a maritime victorious power with extensive colonial networks and international appeal. In addition, there was the institutional support of the French Navy,

UNESCO and the Cousteau Society, which formed a permanent organizational and financial basis. Equally decisive was the ability to stage in the media: television as the leading medium offered serial formats and an iconic visual language, characterized by the red cap and the research vessel *Calypso.* Economic scalability also contributed to the success, for example through the marketing of Aqua-Lung as a mass product, merchandising and sponsorship by large corporations. After all, narrative education played a key role: Cousteau staged himself as the "advocate of the oceans" and moral authority in environmental activism. These factors reinforced each other and made Cousteau a symbolic figure whose impact went far beyond science.

From the late 1950s to the 1970s, Jacques Cousteau was both a source of inspiration and a challenge for many researchers. His works opened up new technical and cultural horizons, but presented others with the task of distinguishing themselves from his strongly media-oriented practice. Cousteau's enthusiasm for technical and optical gadgets (e.g., silver diving suits and underwater torches) and his distinctive showmanship gave important cultural and technological impulses to underwater research. At the same time, this orientation meant that the disciplinary rigour demanded in science was not always consistently observed. For subsequent researchers, this meant that on the one hand they could orient themselves on Cousteau's popularity and ingenuity, but on the other hand they were also forced to emphasize their own scientific standards and methodological precision more strongly in order to distinguish themselves from his rather narrative-dramatic approach to the underwater world.

Jacques-Yves Cousteau left a multitude of institutional, media and political traces that continue to shape his after-effects today. The Cousteau Society, founded in 1973, long functioned as a collection basin for donors, activists and media expertise (Constans, 1982). In addition, family successors, sons and grandchildren, established themselves as multiplicative figures. Institutional continuity was evident in the conduct of research projects with his name and public relations. The continued use of his image corpus, including films, photographs and the iconic *Calypso* aesthetic, guaranteed the persistence of his public presence. Cousteau was not conserved as a sterile historical figure but remained present as a narrative bearer in collective memory as "the man with the red cap" who "saves" the oceans. This symbolic effect facilitated further commercialization

through DVD collections, licensed products and educational programs. Cousteau worked politically through advocacy, consulting and public campaigns; his voice was heard in international forums and mass media and was socially empowered.

Iconization and attribution of "premieres"

A central aspect of the different perceptions between Hass and Cousteau lies in the culture of remembrance: Cousteau, through his oversized image and the media iconization, was often automatically and universally associated with "premieres" and pioneering acts, such as by Than (2010):

"Why is the ocean explorer such a legend? Here are five good reasons:
1. Jacques Cousteau pioneered SCUBA gear.
2. Cousteau's underwater documentaries brought a new world to viewers.
3. Cousteau pioneered underwater base camps.
4. Cousteau helped restrict commercial whaling.
5. Cousteau helped stop underwater dumping of nuclear waste."

Many of these and similar attributions are unconcerned, historically unambiguous, or have already been prepared by other researchers. It is also striking that reception often speaks of "premieres" without specifically naming them. The term here serves less for historical precision than for reinforcing the iconic image of Cousteau. This creates the impression of a continuous series of groundbreaking achievements, even if the actual history of innovation was more complex and distributed.

Examples of critical attributions illustrate this. As early as 1939, Hans Hass conducted dives with scientific questions, years before Cousteau staged his expeditions in the media. Hass was also active early on in underwater photography and film: he presented underwater photos and the raw version of a film in 1939, while Cousteau's "premiere" in this area represented a popularization rather than an original invention. The same applies to the cinematic development of the underwater world: Hass released a documentary feature-length film with the film *Unternehmen Xarifa* (1954), while Cousteau's *The Silent World* was not released until 1956 and is regarded as a hybridization between science and fiction (Duncan, 2018). Even the autonomous diving device shows the differentiation: Cousteau's Aqua-Lung from 1943 was a technical

breakthrough, but Hass already used a SCUBA diving device from 1942. The use of compressed air instead of oxygen was a qualitative development, but did not change the basic functional idea and the already occurring cultural change. So, the “premiere” con Cousteau was not in the idea, but in its industrial scaling.

The mechanisms behind this attribution are clearly recognizable: Cousteau's films and TV series reached a mass audience and made his achievements visible, while other pioneers remained in the professional audience or regional context. The red cap, the *Calypso* and the serial dramaturgy of his productions created a strong visual system that made him appear “first”, even when the history of innovation was more nuanced. Historians, media and pop culture for decades reinforced the image of Cousteau as a larger-than-life figure, automatically attributing many achievements to him.

In his laudatory speech, Jean-Michel Cousteau, the son of Jacques-Yves Cousteau, expressed the fact that the pioneering achievements cannot be attributed to just one single person at the presentation of the two NOGI Awards to Hans Hass in January 1999: “You and my late, great father and Frédéric Dumas and Captain Tailliez, you were the ones who started it all. And you were the ones who have the responsibility for this incredible adventure that has followed in your footsteps” (Cousteau, 1999).

This shows that Cousteau's real strength lay less in original inventions than in the ability to make technical developments globally visible through media staging and institutional reinforcement. He became a symbol of progress and discovery, even if the attribution of “premieres” often went fuzzy and other actors disappeared in the shadow of his iconization. The development of the Aqua-Lung was undoubtedly a technical and cultural progress, but the conceptual and scientific basis for modern research diving had already been laid by Hans Hass and others. The representation that Cousteau set numerous “premieres” therefore falls short: Many supposed first successes were further developments or media-effective repetitions of ideas that had already been realized before, often with greater scientific rigour and under more difficult conditions. Cousteau was a brilliant communicator and contributed significantly to the global popularization of marine research. Those who wish to tell the full history of diving must acknowledge this pioneering work of others and critically question the attribution of Cousteau's “premieres”.

Hass: Innovation, limitations and ambivalent after-effects

Despite his pioneering technical and scientific achievements, Hans Hass's impact and brand value remained significantly limited. A major reason was the geopolitical disadvantages: Austria and Germany were landlocked countries without a maritime tradition and also burdened by the lost war. In addition, there were institutional ruptures, as Hass could not build an internationally networked research organization. His projects were usually financed only on a project basis. He was also at a disadvantage in the media: Instead of colorful, multi-part TV series, Hass relied on cinema documentaries that were more factual-scientific and offered less connectivity to global markets. When the leading medium of television took its global upswing in the 1960s, Hass was no longer active in marine research and could no longer use this media booster, unlike Cousteau. Economically, his work remained limited, also for this reason, since his special equipment did not find any industrial utilization and no scalable product line was created. Finally, a narrative weakness emerged: Hass staged itself scientifically-analytically, his Energon theory remained an outsider project and lacked the moral charge that Cousteau claimed for himself. Thus, Hass remained an innovator and researcher, but without the structural amplifiers that made Cousteau a brand.

Hans Hass plays an ambivalent role in the history of underwater research. On the one hand, he was an innovator and pioneer: technically, he was often ahead of his time, developing rebreathers and underwater cameras and issuing ecological warnings early on. He is also considered one of the first to not demonize sharks, but to represent them as an integral part of the ecosystem. On the other hand, his Energon theory positioned him as an outsider. The theory was conceived as a comprehensive framework to explain behavior and energy flows. However, it gained little acceptance within mainstream science. As a broad and complex theoretical construct, it aims to describe energy balances while positioning itself at the margins of established scientific doctrine. Although it does not necessarily contradict prevailing theories, it remains difficult, if not impossible, to empirically verify or falsify. Added to this was a politically fraught context: his early films were made in the context of the Nazi era, which complicated his international recognition after 1945 and isolated him in the global scientific community.

Hass also remained limited in the media: while Cousteau used television and serial formats, Hass focused more on cinema documentaries and scientific publications, media whose reach decreased significantly from the 1960s onwards.

In the aftermath, Hass remains known and appreciated as a pioneer, especially in Europe, but his ambivalent role is reflected in the fact that on the one hand he is celebrated as an innovator, on the other hand he is perceived as an academic outsider and less successful researcher in terms of media strategy. In professional circles he is recognized for his early contributions to behavioral observation, diving techniques and popularization of marine biology. His theoretical work, especially the Energon idea, remained controversial. Its after-effect is also regionally limited: In Europe, Hass enjoys greater recognition, but this often remains specialized and does not reach a global dimension comparable to Cousteau.

Conclusion: Maritime Memory, Media Authority, and Scientific Legitimacy

This study has examined the divergent legacies of Hans Hass and Jacques-Yves Cousteau not as a question of individual merit, but as a problem of structural visibility and cultural remembrance. By tracing how scientific practice, media circulation, institutional embedding, and narrative authority interacted over time, the analysis demonstrates that maritime memory is not a passive repository of past achievements but an actively constructed field shaped by power, access, and repetition.

The comparative perspective shows that Cousteau's enduring global prominence resulted from his integration into a dense network of institutions, media infrastructures, and scalable technologies that ensured continuity, repetition, and emotional resonance. Hass, by contrast, operated within a more fragmented and project-based framework, prioritizing scientific observation and technological precision over narrative expansion and institutional permanence. These different configurations profoundly influenced how both figures entered collective memory, regardless of the originality or scientific rigour of their respective contributions.

The international dominance of Cousteau must therefore not lead to the marginalization or ignoring of Hass's achievements, but rather to an understanding of both as complementary figures whose legacies reflect different yet interdependent modes of scientific practice.

A further clarification of these findings emerges when the comparative analysis of Hass and Cousteau is read against the historiographical insights offered by Helen M. Rozwadowski. Her insistence that the ocean's history is neither self-evident nor naturally preserved, but must be actively rendered meaningful through systems of knowledge, technology, and representation, helps to explain why the legacies of the two figures diverged so markedly. Maritime remembrance does not arise from proximity to the sea or from scientific rigour alone, but from the capacity to translate oceanic practice into durable and culturally legible forms.

Rozwadowski's characterization of the ocean as a space whose past does not readily disclose itself, and which lacks an inherent narrative grammar, is particularly instructive in this context. Hass's work, grounded in careful observation, experimental technology, and scientific documentation, engaged directly with these traces but remained largely confined to limited, project-based modes of circulation. Cousteau, by contrast, succeeded in embedding oceanic exploration within a media ecology capable of repeatedly activating and stabilizing those traces for mass audiences. What entered maritime memory was therefore not simply scientific discovery, but a specific mode of making the ocean visible, narratable, and institutionally authoritative.

As Rozwadowski forcefully concludes, "we must jettison our perception of the ocean as a timeless place, apart from humans. We must transform our understanding of the sea to one bound with history and interconnected with humanity" (2018, 227). Read through this lens, the divergent legacies of Hans Hass and Jacques-Yves Cousteau appear less as a hierarchy of achievement than as the outcome of differing memorial infrastructures, shaped by unequal capacities for media visibility, institutional authority, and cultural stabilization. Maritime memory emerges here as a selective process in which media authority and scientific legitimacy become inseparable, shaping not only how ocean science is remembered, but whose work continues to circulate, resonate, and endure.

From a theoretical perspective, the concept of maritime memory developed in this study builds on and specifies established approaches in cultural memory research. Following Halbwachs, maritime memory can be understood as socially framed, emerging within specific institutional, national, and professional groups whose shared frameworks determine which forms of oceanic knowledge are preserved and granted legitimacy (1992, 22). Connerton's emphasis on embodied and performative practices of remembrance highlights how exploration, diving practices, expeditions, and ritualized public appearances function as modes of memory through which scientific authority is enacted and stabilized (1989, 3). Erll's work on media and cultural memory provides the connective framework for understanding how such practices gain durability through circulation, repetition, and remediation across media systems (2011, 113). As Döbler (2018, 224) has argued, film can serve as an illustrative medium for the functioning of mnemonic frameworks, making visible how frames and social memories contribute to processes of group and collective formation. Maritime memory thus denotes a domain-specific configuration in which scientific practice, media representation, and institutional authority converge to stabilize particular narratives of ocean exploration over time, a process that tends to privilege continuity and visibility while leaving less institutionally anchored trajectories structurally exposed.

With regard to the guiding hypothesis of this study, the findings clearly support the assumption that the divergent recognition of Hans Hass and Jacques-Yves Cousteau cannot be adequately explained by differences in scientific achievement alone. Instead, long-term visibility and canonical status in marine science emerge from the interaction of geopolitical conditions, institutional support, media infrastructures, economic scalability, and narrative coherence. Cousteau's prominence was amplified by stable organizational frameworks and globally circulating media narratives, whereas Hass's contributions, though scientifically innovative, lacked comparable structural reinforcement. The hypothesis is therefore confirmed in a differentiated manner: maritime memory functions not as a merit-based archive, but as a historically contingent process in which recognition depends on the availability of cultural, institutional, and medial resources that allow scientific work to endure beyond its immediate context.

By conceptualizing maritime memory as a historically contingent process rather than a neutral reflection of achievement, this study contributes to a more differentiated understanding of how marine science is remembered, canonized, and hierarchized. It suggests that future historiography of ocean research should attend more closely to the infrastructures of remembrance themselves, asking not only who explored the sea, but under which conditions their work continues to circulate, resonate, and endure.

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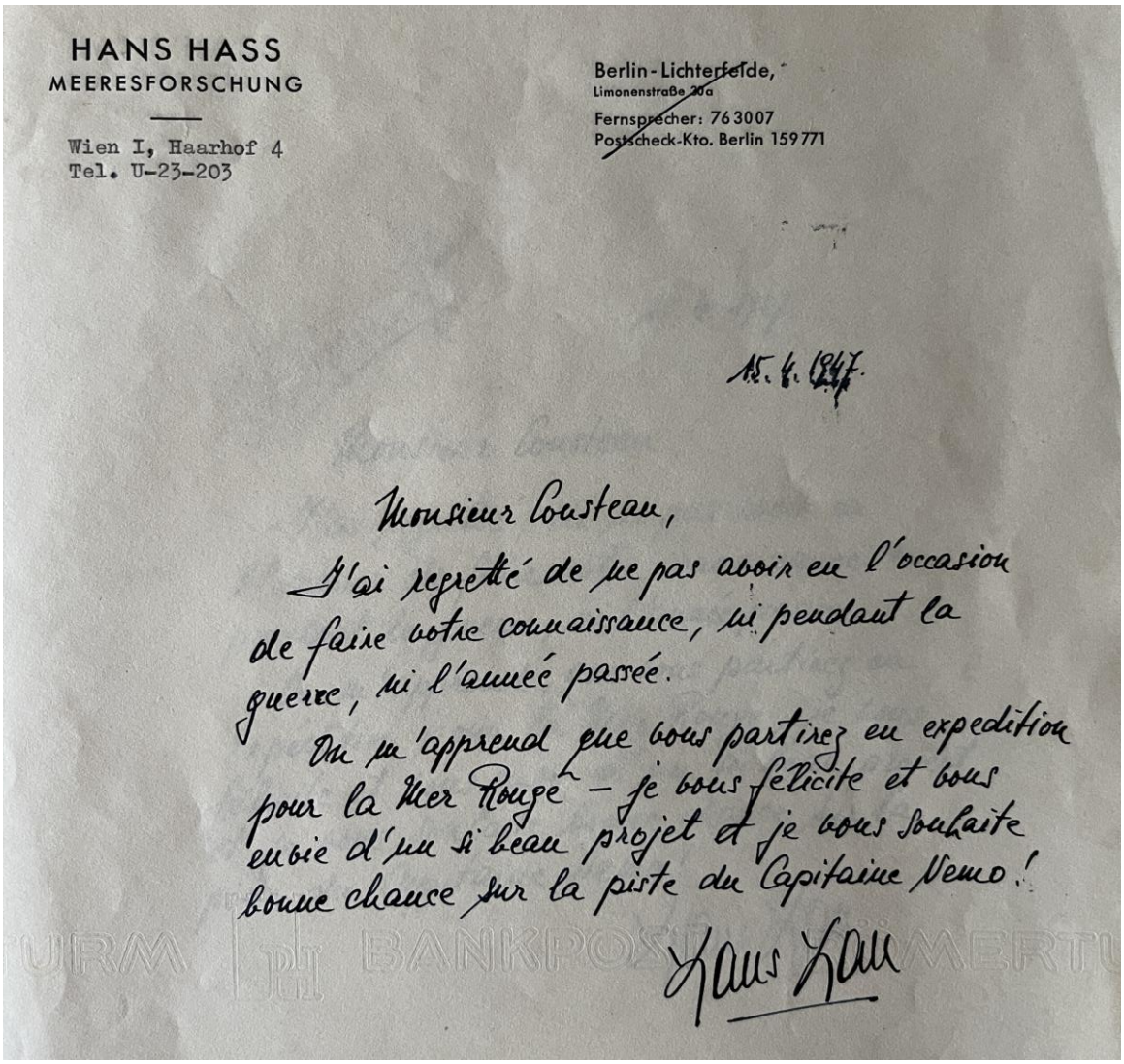
Appendix


HANS HASS
MEERESFORSCHUNG

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Berlin-Lichterfelde,
Limonenstraße 30a
Fernsprecher: 763007
Postscheck-Kto. Berlin 159771

15. 4. 1947.

Monsieur Cousteau,

J'ai regretté de ne pas avoir eu l'occasion de faire votre connaissance, ni pendant la guerre, ni l'année passée.

On m'apprend que vous partirez en expedition pour la Mer Rouge – je vous felicite et vous envie d'un si beau projet et je vous souhaite bonne chance sur la piste du Capitaine Nemo!

Hans Hass

Fig. 1 Letter Hass/Cousteau April 15, 1947

Translation:

Mr. Cousteau,
I regretted not having the occasion to meet you, not during the war, nor the past year.
It has come to my knowledge that you are leaving on an expedition to the Red Sea - I congratulate you and envy you on such a beautiful project, I wish you good luck on the trail of Captain Nemo!
Hans Hass

(Source: Hans Hass Archive)

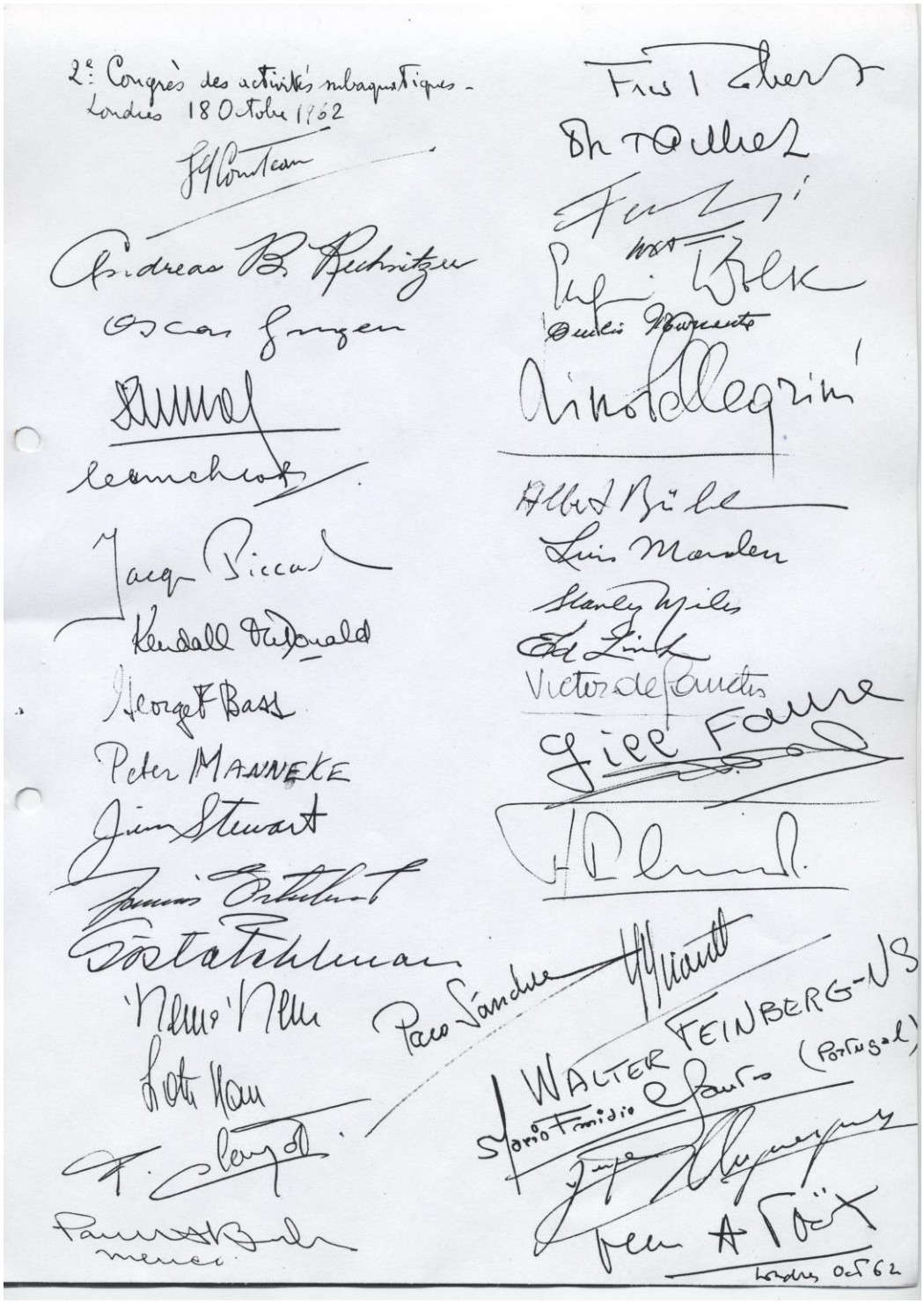
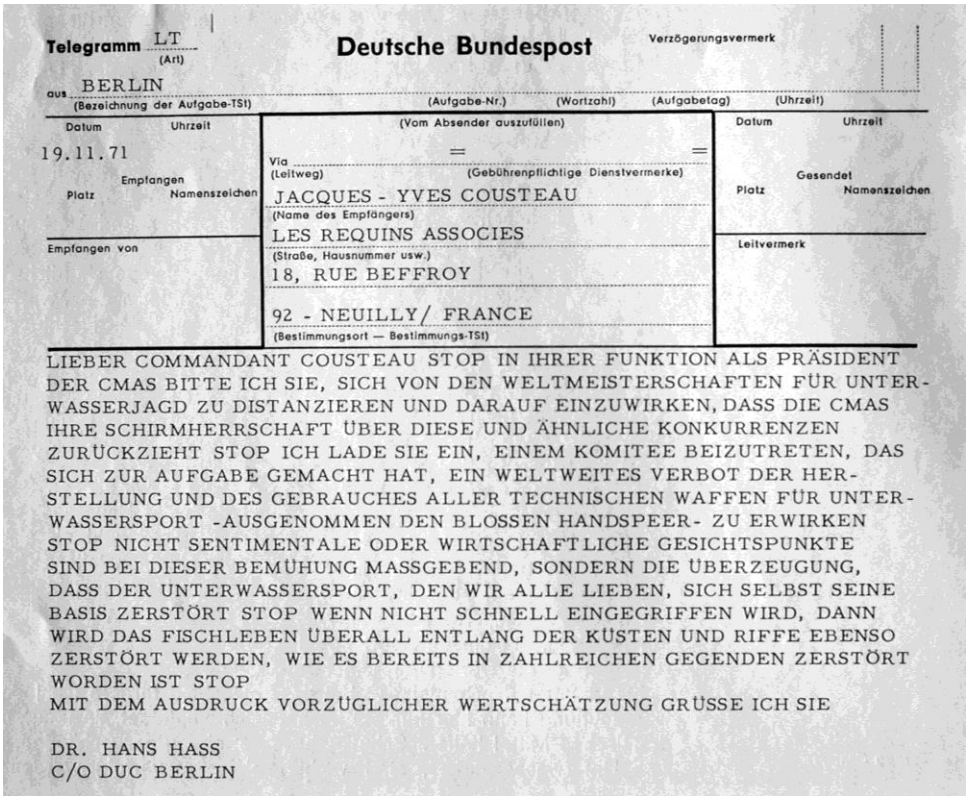


Fig. 2 Signatures World Congress

Original document of the World Congress of Underwater Activities 1962 with authentic signatures of Jacques-Yves Cousteau, Hans and Lotte Hass, and other delegates. Cousteau signed at the top. A key finding for the reconstruction of transnational networks of underwater research in the early 1960s (Source: Hans Hass Archive).



Telegramm LT (Art) — Deutsche Bundespost — Verzögerungsvermerk

aus BERLIN (Bezeichnung der Aufgabe-TSt) (Aufgabe-Nr.) (Wortzahl) (Aufgabetag) (Uhrzeit)

Datum 19.11.71 Uhrzeit

Empfangen Platz Namenszeichen

Empfangen von

(Vom Absender auszufüllen)

Via (Leitweg) (Gebührenpflichtige Dienstvermerke)

JACQUES - YVES COUSTEAU
(Name des Empfängers)

LES REQUINS ASSOCIES
(Straße, Hausnummer usw.)

18, RUE BEFFROY

92 - NEUILLY/ FRANCE
(Bestimmungsort — Bestimmungs-TSt)

Datum Uhrzeit

Gesendet Platz Namenszeichen

Leitvermerk

LIEBER COMMANDANT COUSTEAU STOP IN IHRER FUNKTION ALS PRÄSIDENT DER CMAS BITTE ICH SIE, SICH VON DEN WELTMEISTERSCHAFTEN FÜR UNTER-WASSERJAGD ZU DISTANZIEREN UND DARAUF EINZUWIRKEN, DASS DIE CMAS IHRE SCHIRMHERRSCHAFT ÜBER DIESE UND ÄHNLICHE KONKURRENZEN ZURÜCKZIEHT STOP ICH LADE SIE EIN, EINEM KOMITEE BEIZUTRETEN, DAS SICH ZUR AUFGABE GEMACHT HAT, EIN WELTWEITES VERBOT DER HER-STELLUNG UND DES GEBRAUCHES ALLER TECHNISCHEN WAFFEN FÜR UNTER-WASSERSPORT -AUSGENOMMEN DEN BLOSSEN HANDSPEER- ZU ERWIRKEN STOP NICHT SENTIMENTALE ODER WIRTSCHAFTLICHE GESICHTSPUNKTE SIND BEI DIESER BEMÜHUNG MASSGEBEND, SONDERN DIE ÜBERZEUGUNG, DASS DER UNTERWASSERSPORT, DEN WIR ALLE LIEBEN, SICH SELBST SEINE BASIS ZERSTÖRT STOP WENN NICHT SCHNELL EINGEGRIFFEN WIRD, DANN WIRD DAS FISCHLEBEN ÜBERALL ENTLANG DER KÜSTEN UND RIFFE EBENSO ZERSTÖRT WERDEN, WIE ES BEREITS IN ZAHLREICHEN GEGENDEN ZERSTÖRT WORDEN IST STOP
MIT DEM AUSDRUCK VORZÜGLICHER WERTSCHÄTZUNG GRÜSSE ICH SIE

DR. HANS HASS
C/O DUC BERLIN

Fig. 3 Telegram Hass/Cousteau

Translation:

Dear Commander Cousteau,
In your function as President of CMAS, I ask you to distance yourself from the World Underwater Hunting Championships and ensure that CMAS withdraws its patronage of these and similar competitions. I invite you to join a committee that has set itself the task of achieving a worldwide ban on the manufacture and use of all technical weapons for underwater sports, with the exception of the simple hand spear. This effort is not driven by sentimental or economic considerations, but by the conviction that the underwater sports we all love are destroying their own foundation. If action is not taken quickly, fish life along coasts and reefs everywhere will be destroyed, just as it has already been destroyed in numerous areas.
With expressions of high esteem, I send you my best regards.
Dr. Hans Hass
c/o DUC Berlin

Telegram from Hans Hass dated 19 November 1971, addressed to Jacques-Yves Cousteau. Written at a time when environmental concerns were increasingly entering international debate, the message reflects Hass's alarm at the ecological consequences of technologically intensified underwater hunting. He frames his appeal not in sentimental or economic terms, but as a call for regulatory action at the level of international sport governance. By addressing Cousteau directly and invoking his authority within CMAS, the telegram documents Hass's attempt to influence emerging policy discussions on underwater sports and to promote restrictions on practices he considered harmful to coastal and reef ecosystems (Source: Hans Hass Archive).

LINK7500 8652404U001 1NOV94 10:15/10:15 GMT
FROM: 19848018
PRESS ASSOCIATION
TO: 8763196

PAX4756

10:16: GMT 1nov94

Att: Reg Valentine^
From PA News^
1 NATURE Hass^
^
`I WAS DIVING PIONEER, NOT COUSTEAU'^
By Tim Moynihan, PA News^
Veteran marine researcher Hans Hass today claimed that he beat Jacques Cousteau to many of the major developments in undersea exploration.^
The 75-year-old Austrian showed slides and film of early diving expeditions at a conference and told PA News afterwards: ``I was never concerned with the question of priority, for 50 years I let Cousteau do what he liked.^
``But it has come to the point that my name is no longer mentioned in books on the history of diving, it's just Cousteau.^
``I have not said a word about this for all this long time, but on this occasion I did. I have asked the Historical Diving Society to assist me to get the dates clear.''^
Professor Hass showed film of early expeditions at the society's annual conference in Whitstable, Kent.^
He said he was the first to swim underwater to conduct research rather than walk along the sea bed in boots, raising clouds of sand.^
And he defied warnings about his personal safety to go swimming with sharks as long ago as 1937.^
He insisted: ``I was the first to do this.''^
Professor Hass was accompanied by his wife Lotte, 66, who starred in his documentary films with him.^
The 84-year-old Cousteau has become the public face of marine research.^
He is famed for being partly responsible for the invention of the aqualung in 1943 and creating an international appetite for the sport of sub-aqua diving. He has won a string of awards for his films.^
end ro^

Fig. 4 Press release Nov 01, 1994, Press Association

Public statement announcing Hans Hass's appeal for a reassessment of early diving history and priority claims.

(Source: Hans Hass Archive)

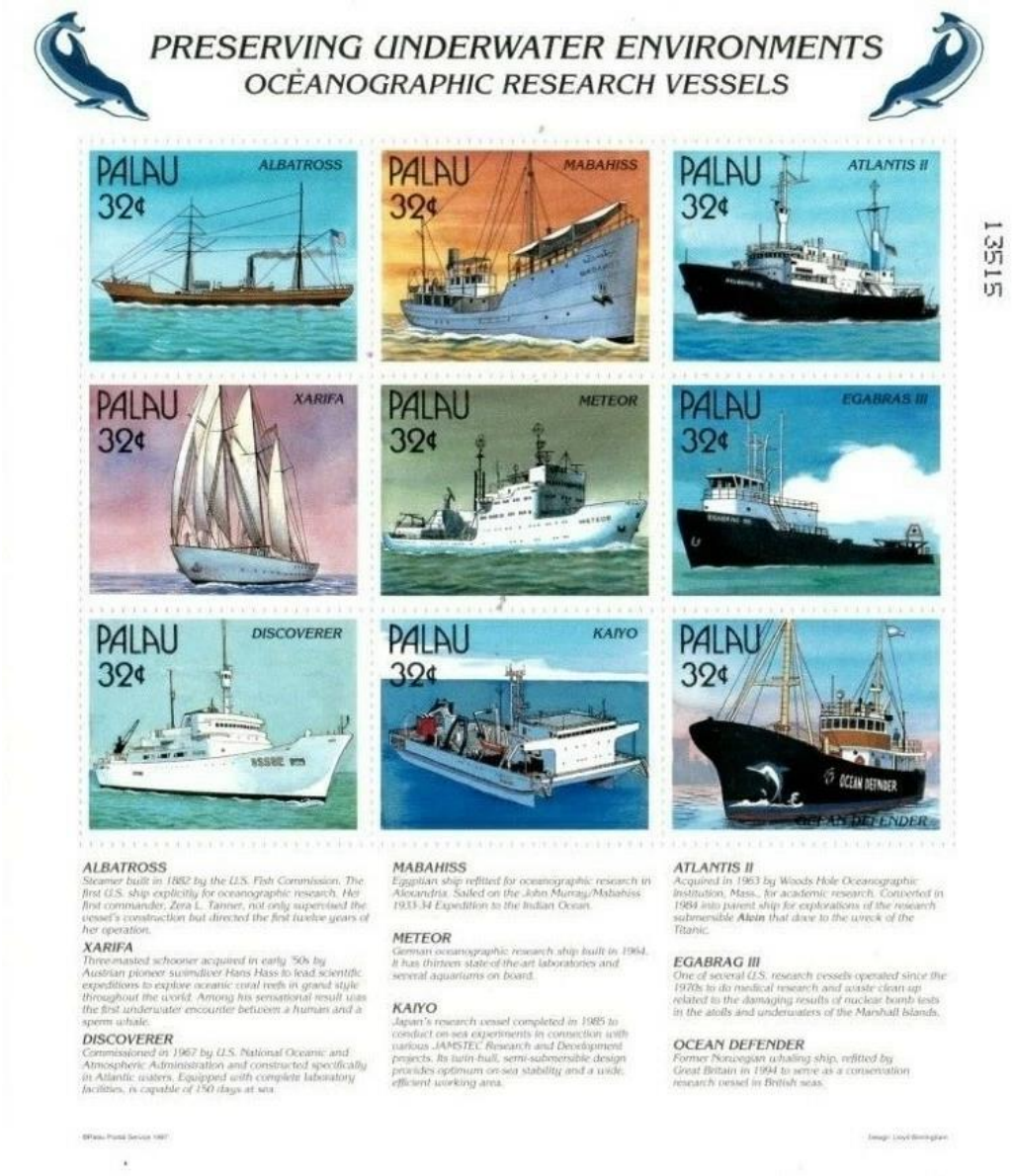

PRESERVING UNDERWATER ENVIRONMENTS
OCEANOGRAPHIC RESEARCH VESSELS
PALAU 32¢ ALBATROSS
PALAU 32¢ MABAHISS
PALAU 32¢ ATLANTIS II
PALAU 32¢ XARIFA
PALAU 32¢ METEOR
PALAU 32¢ EGABRAS III
PALAU 32¢ DISCOVERER
PALAU 32¢ KAIYO
PALAU 32¢
ALBATROSS
Steamer built in 1882 by the U.S. Fish Commission. The first U.S. ship explicitly for oceanographic research. Her first commander, Zera L. Tanner, not only supervised the vessel's construction but directed the first twelve years of her operation.
XARIFA
Three-masted schooner acquired in early '50s by Austrian pioneer swimdiver Hans Hass to lead scientific expeditions to explore oceanic coral reefs in grand style throughout the world. Among his sensational result was the first underwater encounter between a human and a sperm whale.
DISCOVERER
Commissioned in 1967 by U.S. National Oceanic and Atmospheric Administration and constructed specifically in Atlantic waters. Equipped with complete laboratory facilities, is capable of 150 days at sea.
MABAHISS
Egyptian ship refitted for oceanographic research in Alexandria. Sailed on the John Murray/Mabahiss 1933-34 Expedition to the Indian Ocean.
METEOR
German oceanographic research ship built in 1964. It has thirteen state-of-the-art laboratories and several aquariums on board.
KAIYO
Japan's research vessel completed in 1985 to conduct on-sea experiments in connection with various JAMSTEC Research and Development projects. Its twin-hull, semi-submersible design provides optimum on-sea stability and a wide, efficient working area.
ATLANTIS II
Acquired in 1963 by Woods Hole Oceanographic Institution, Mass., for academic research. Converted in 1984 into parent ship for explorations of the research submersible Alvin that dove to the wreck of the Titanic.
EGABRAG III
One of several U.S. research vessels operated since the 1970s to do medical research and waste clean up related to the damaging results of nuclear bomb tests in the atolls and underwaters of the Marshall Islands.
OCEAN DEFENDER
Former Norwegian whaling ship, refitted by Great Britain in 1994 to serve as a conservation research vessel in British seas.

Fig. 5 Stamp set *Edition Palau SCOTT # 436-439 (1997).*

"Xarifa. Three masted schooner acquired in early50s by Austrian pioneer swimdiver Hans Hass to lead scientific expeditions to explore oceanic coral reefs in grand style throughout the world. Among his sensational result was the first underwater encounter between a human and a sperm whale."

The *Xarifa* as a symbol of independent marine research. Hans Hass's expedition ship *Xarifa* appears in this stamp series alongside institutional research vessels, while Jacques-Yves Cousteau's *Calypso* is notably absent**.** Its inclusion recognizes an independent, privately organized mode of marine research grounded in visual mediation, technical experimentation, and narrative communication. In contrast to the media-driven popularization associated with *Calypso*, *Xarifa* represents a more scientifically motivated expeditionary practice within twentieth century underwater exploration.

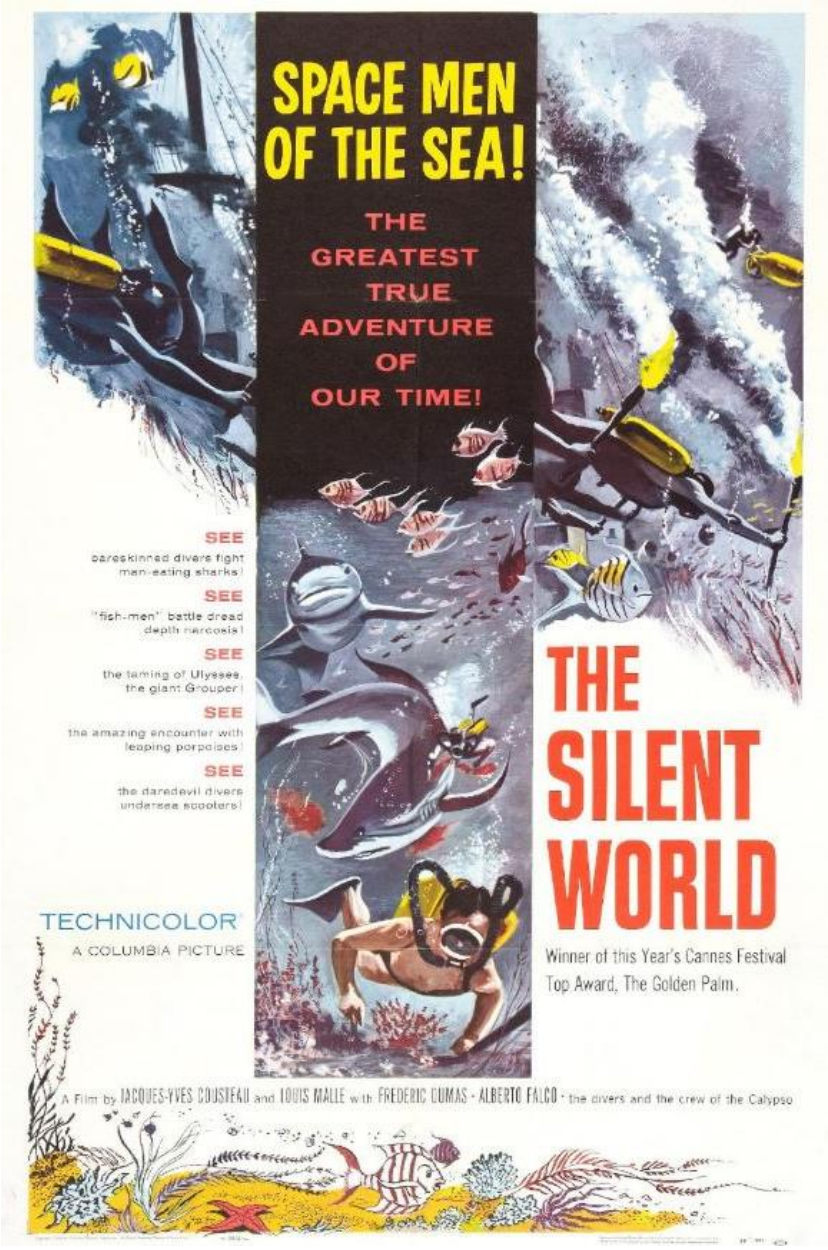
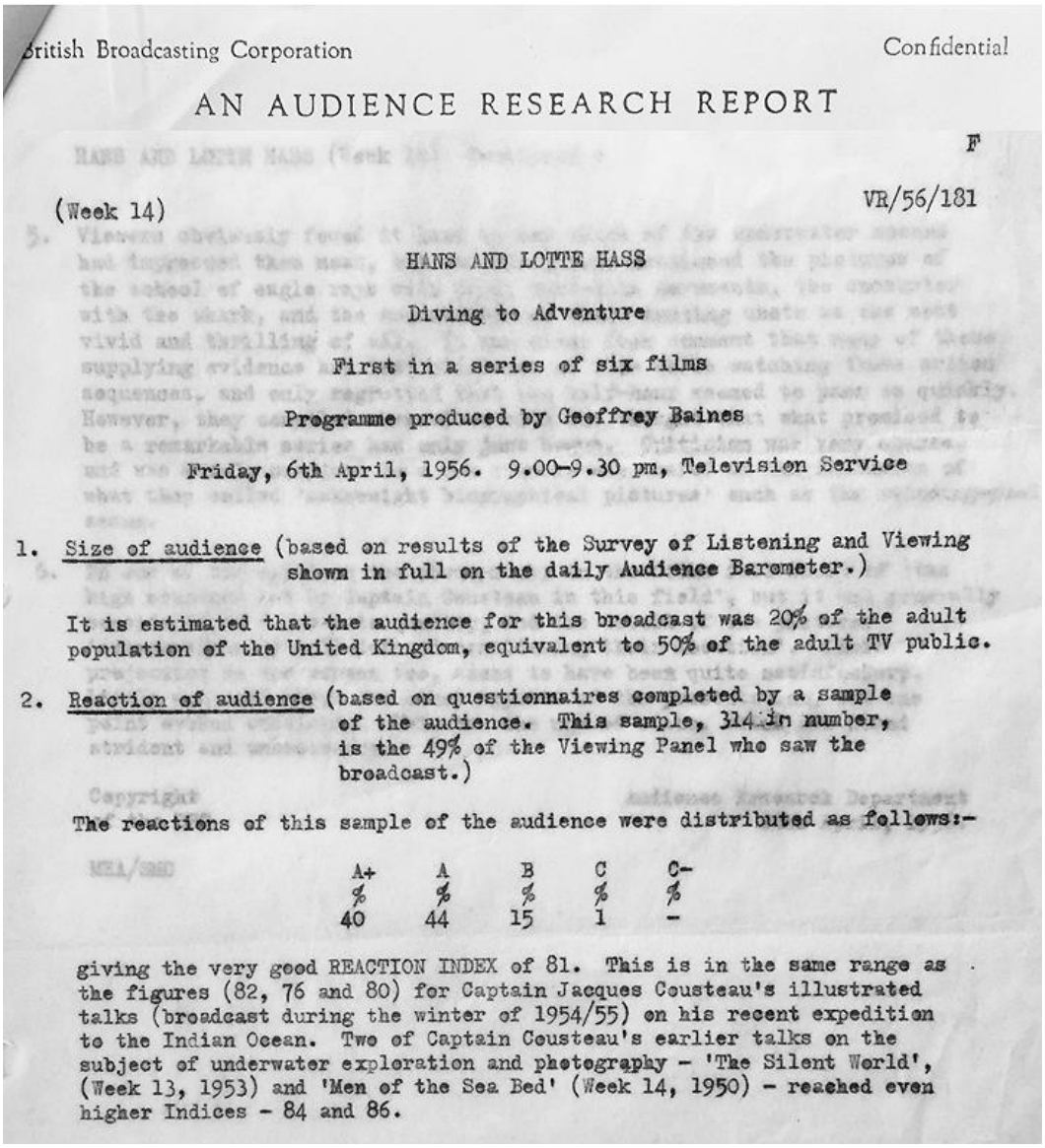

SPACE MEN OF THE SEA!
THE GREATEST TRUE ADVENTURE OF OUR TIME!
SEE bareskinned divers fight man-eating sharks!
SEE "fish-men" battle dread depth narcosis!
SEE the taming of Ulysses, the giant Grouper!
SEE the amazing encounter with leaping porpoises!
SEE the daredevil divers undersea scooters!
TECHNICOLOR
A COLUMBIA PICTURE
THE SILENT WORLD
Winner of this Year's Cannes Festival Top Award, The Golden Palm.
A Film by JACQUES-YVES COUSTEAU and LOUIS MALLE with FREDERIC DUMAS · ALBERTO FALCO · the divers and the crew of the Calypso

Fig. 6 Film poster "The Silent World" (1956)

This poster for *The Silent World* (1956) frames underwater explorers as maritime counterparts to Cold War astronauts. As new heroic figures, the *Space Men* were no longer confined to outer space but increasingly reappeared in the sea, the "inner space". Underwater explorers adopted the imagery, rhetoric, and technological symbolism of spaceflight, reframing the ocean as an inner frontier analogous to the cosmos. This visual metaphor exemplifies the media-driven heroization and techno utopian imagery that, as demonstrated in this study, played a decisive role in amplifying Jacques-Yves Cousteau's global visibility while marginalizing alternative, less spectacularly mediated approaches to underwater research (Source: Private Collection).



British Broadcasting Corporation — Confidential

AN AUDIENCE RESEARCH REPORT

F

(Week 14) VR/56/181

HANS AND LOTTE HASS

Diving to Adventure

First in a series of six films

Programme produced by Geoffrey Baines

Friday, 6th April, 1956. 9.00–9.30 pm, Television Service

1. Size of audience (based on results of the Survey of Listening and Viewing shown in full on the daily Audience Barometer.)

It is estimated that the audience for this broadcast was 20% of the adult population of the United Kingdom, equivalent to 50% of the adult TV public.

2. Reaction of audience (based on questionnaires completed by a sample of the audience. This sample, 314 in number, is the 49% of the Viewing Panel who saw the broadcast.)

The reactions of this sample of the audience were distributed as follows:-

A+	A	B	C	C-
%	%	%	%	%
40	44	15	1	-

giving the very good REACTION INDEX of 81. This is in the same range as the figures (82, 76 and 80) for Captain Jacques Cousteau's illustrated talks (broadcast during the winter of 1954/55) on his recent expedition to the Indian Ocean. Two of Captain Cousteau's earlier talks on the subject of underwater exploration and photography – 'The Silent World', (Week 13, 1953) and 'Men of the Sea Bed' (Week 14, 1950) – reached even higher Indices – 84 and 86.

Fig. 7 Analysis BBC

A BBC evaluation of audience reach and reception from 1956 provides empirical evidence that Hans Hass's television series *Diving to Adventure* elicited audience responses almost identical to those generated by Jacques-Yves Cousteau's illustrated lectures. Immediate audience engagement was therefore comparably high. Hass was received just as positively and attentively and maintained this level consistently across all episodes, culminating in a peak reaction score of 85 in the final installment of the series. Nevertheless, Cousteau's far more frequent media presence, combined with sustained institutional support from the French Navy, U.S. television networks, and later the Cousteau Society, anchored his reputation far more firmly in the long term. The document thus illustrates that it was not programme quality, but rather media exposure and organizational reinforcement mechanisms, that proved decisive for later global perception (Source: Hans Hass Archive).